KRAUN®
COMPUTER ACCESSORIES

Manual

ADSL2/2+ Wireless-N Router 150Mbps plus

User's Manual

Cod. KN.2R

Warning

The manufacturer is under no circumstances liable for any unauthorised modifications made to the product by the user or any other parties which may compromise its conformity and safety.

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Chapter 1. Product Overview

Functions and operations are subject to vary according to different software versions; please refer to the actual product you purchase.

Thanks for purchasing this Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"! It is an easy-to install gateway device, which provides easy-to-operate configuration interface to free you from complicated configurations. Thus, it can help you to access Internet through some simple configurations.

Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus", an IEEE802.11n-compliant, easy to use, power saving, ADSL2+ router with an up to 150Mbps Wireless transmission rate, is integrated with ADSL2+ Modem, wireless router, switch and wired router all in one. The wireless transmission rate and coverage it provides is 6 times of that of a common 54Mbps product, thus freeing you from surplus and complicated cable distribution.

It mainly uses ADSL (telephone line) access way to share the Internet with multiple computers through wired or wireless connection without being connected to other devices. With super compatibility, it can also share Internet access with multiple computers when its WAN port is connected via a network cable.

WPA, WPA2 and WPS encryption methods, etc are supported on the device to guarantee the security of your wireless network; An English Web management interface and TR-069 remote management methods are supported for easier management; Furthermore, the exclusive setup wizard installation software provided by Kraun offers you easy installation and fast, shared internet access.

In a word, with fast wireless speed and large coverage, Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus" is the best choice for families, student dorms and small-sized enterprises, etc to access Internet wirelessly.

1.1 Product Features

- Complies with IEEE802.11b/g/n, IEEE802.3, IEEE802.3u, ADSL, ADSL2, ADSL2+ standards etc
- Up to 150Mbps Wireless transmission rate which is 6 times of that of a common 54Mbps product
- 6000V lightning-proof design, adaptable to lightning-intensive area
- Compatible with mainstream DSLAM equipments, strong adaptability
- Strong driving capability with up to 6.5Km transmission distance
- Integrates ADSL2+ Modem, wireless router, switch and wired router all in one
- Up to ADSL 24Mbps downstream rate and 1Mbps upstream rate
- Provides one RJ11 port
- Provides 4 LAN ports and the fourth LAN port can be used as a WAN port
- Supports ADSL (telephone line) and LAN (network cable) access ways
- Supports Firewall to prevent hacker attacks
- Supports WPA and the latest WPA2 encryption methods and security authentication agreement
- Supports Bridge, PPPoE, PPPoA, dynamic IP and static IP, etc broadband access methods etc
- Supports automatic selection of wireless channel
- Supports FDM to enable telephoning, faxing and surfing activities to proceed simultaneously without mutual interference
- Supports backup and save of multiple configuration files to meet different network needs
- Setup Wizard software provided for easy and fast installation and configuration
- Supports easy Web based installation to enable fast and easy configuration of parameters

1.2 Package Contents

Unpack the package and check the following items.

- One ADSL2/2+ router
- One Power Adapter
- One Voice Splitter
- One RJ45 network Cable
- Two RJ11 Telephone Lines
- One Quick Installation Guide
- One CD-ROM

If any of the above listed items is missing or damaged, please contact your Kraun reseller for immediate replacement.

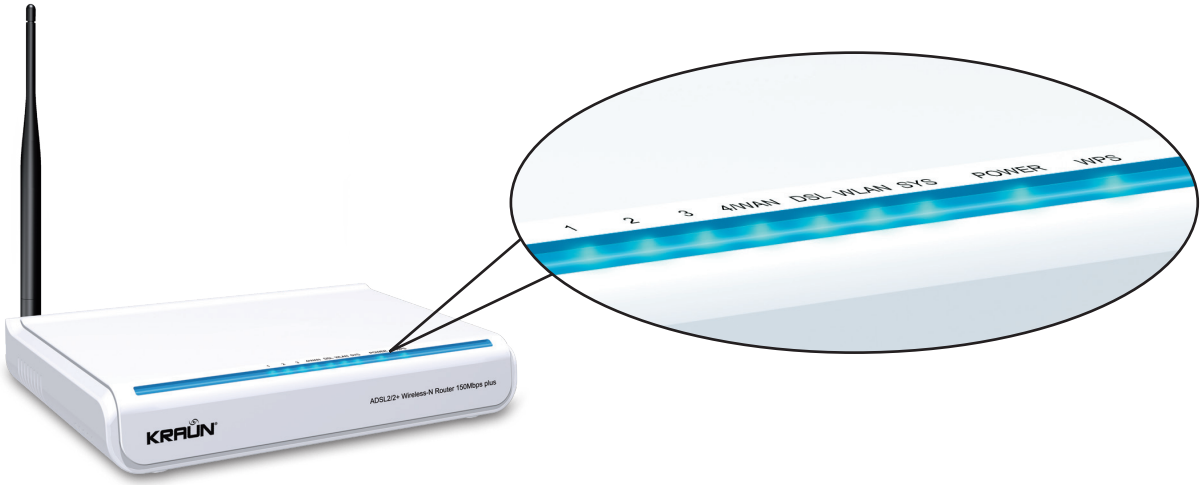
1.3 Factory Defaults

Item	Default Value
Common Default Settings	
Username	admin
Password	admin
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Wireless	
SSID	KRAUN_XXXXXX KRAUN_the last 6 characters of MAC address (example KRAUN_123456)
Wireless Security	Enable
Security Type	WPA-PSK/WPA2-PSK
Encryption	TKIP+AES
WPA KEY	KRAUN_KN.2R
DHCP Server	Enable

Chapter 2. Hardware Description

2.1 Panel Layout

2.1.1 Front Panel

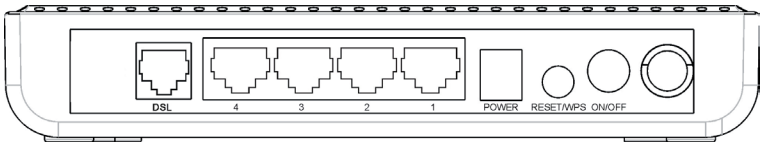


Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus" front panel

There are 9 LED indicators on the front panel of Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus". You can judge whether the device is in correct working condition by checking the status of the indicators. The meanings of the indicators are described as follows:

LED	Color		Status Description
Power	Green	Always On	The device has power
		OFF	The device has no power or power adapter is damaged
SYS	Green	Flashing	System functions correctly
WLAN	Green	Flashing	Packets are being transferred
		Off	Wireless is disabled
ADSL	Green	Slow Flashing	ADSL Link has not been established
		Fast Flashing	ADSL Link is being established
		Always On	ADSL Link has already been established
LAN 1/2/3/4	Green	Off	Unconnected
		Flashing	Packets are being transferred
		Always On	The router has been connected to the computer
WPS	Green	ON	Terminal WPS is successfully connected and the LED lights off in 2 minutes
		Flashing	WLAN terminal is connecting WPS
		Off	No WLAN terminal WPS connection is present or terminal WPS connection exceeds 2 minutes

2.1.2 Back Panel



Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus" Back Panel

ON/OFF: Power Switch. Press it in to turn on the power and press it out to turn off the power.

WPS/RESET: Hold and press it for 1 second to connect WPS, and 7 seconds to bring all settings back to factory defaults.

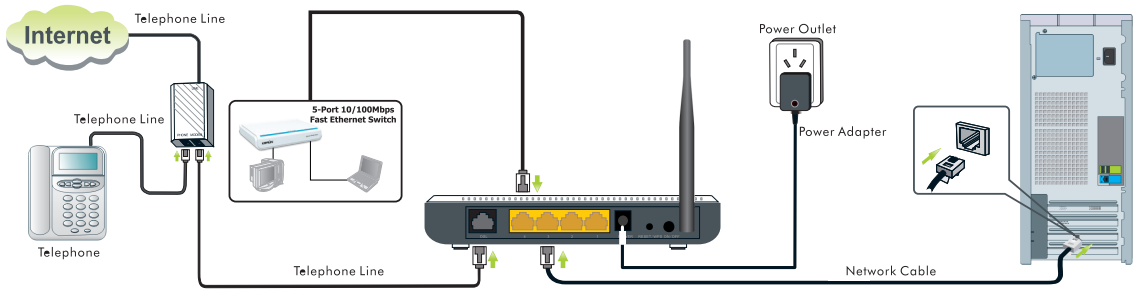
Note: *Please use the supplied power adapter, for use of an unmatched power adapter may damage the device.*

LAN1/2/3/4: LAN network cable interface. It is used to connect Hub, Switch, or computer in a LAN. (When the access way is changed into community broadband, LAN4 can be used as the wireless Router's WAN port.)

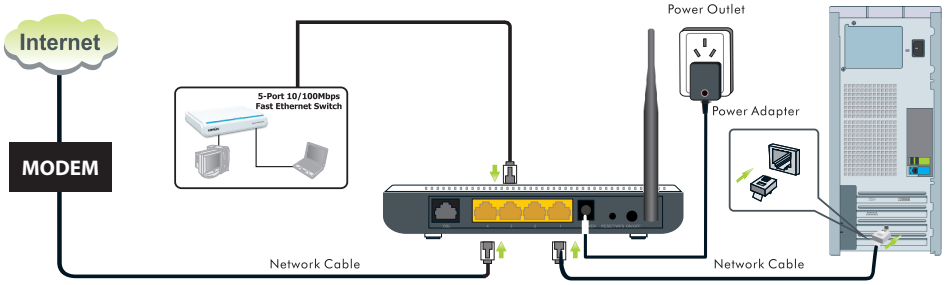
DSL: RJ11 interface for telephone line connection (It does not function when the device is configured to use Ethernet uplink mode as access mode).

2.2 Hardware Connection

- Follow the diagram below to connect your network devices when using DSL uplink access mode (through telephone line).



- Follow the diagram below to connect your network devices when using Ethernet uplink access mode (through network cable).



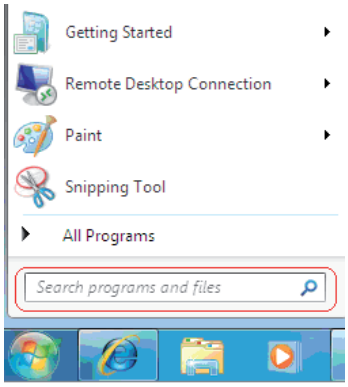
Chapter 3. Fast configuration

Since we are using computer to access Internet, we need to first configure the computer and then log on to router's management interface (WEB UI) to configure the router through the configured computer.
Log in to the router's Web-based UI through "Setup Wizard" provided through a browser installed in your PC.

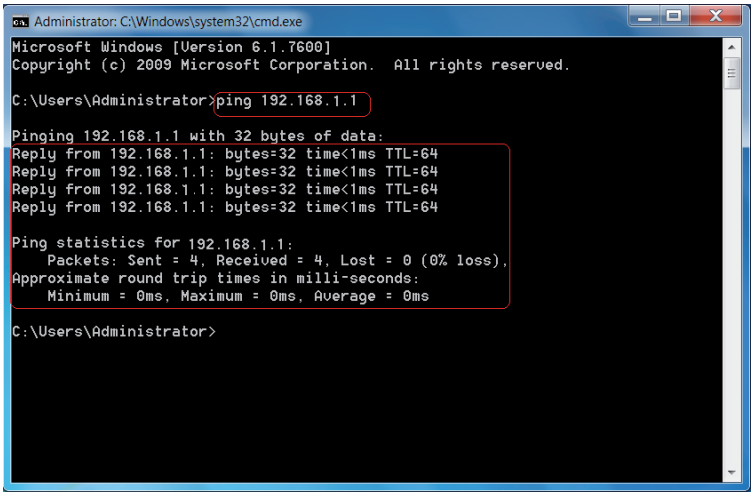
3.1 Logging on to your router through Web browser

Before entering the web browser, you need to verify the connectivity between the router and your computer.
First, click the start menu on the lower left corner of your computer desktop.

Then, input "cmd" in the search programs and file texts box and press "enter'.

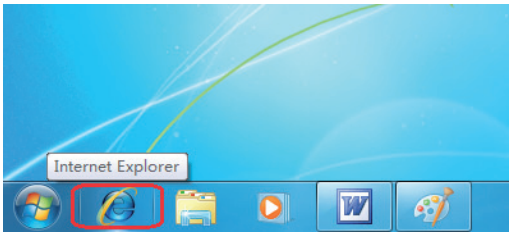


Finally, Open the dos window and enter "ping 192.168.1.1", and press Enter. If the screen displays the following results, it indicates your computer has already been connected to the router.

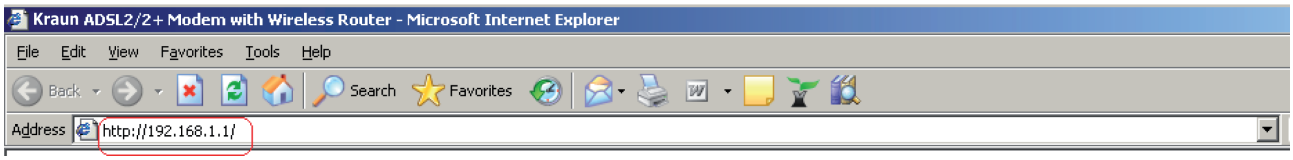

Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Administrator>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Users\Administrator>

Now the direct link between your computer and the router has been successfully established, which means you can log on to the router's web-based utility.

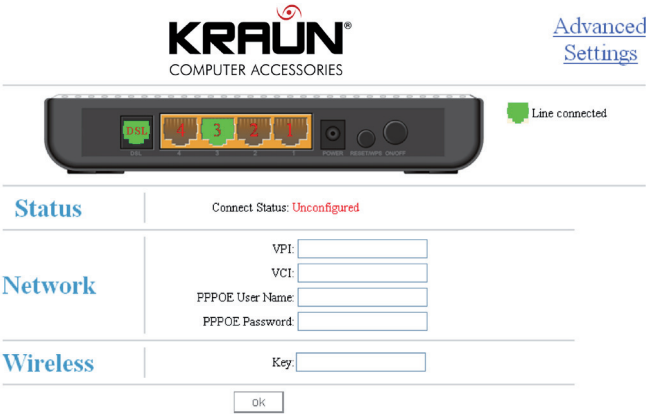
1. Open the IE Browser as shown below.



2. Input http://192.168.1.1 in the address field and press "Enter" to enter router's management interface.


Kraun ADSL2/2+ Modem with Wireless Router - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.1.1/

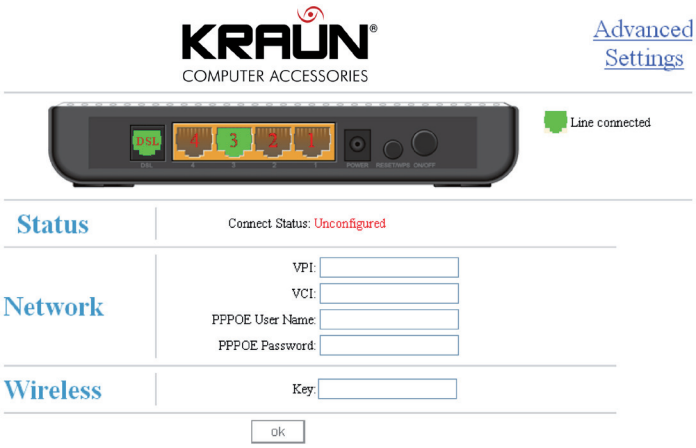
3. The router's management interface is displayed as below:



3.2 Fast Internet Access

In previous section, we have explained how to log on to the router and in the following; we are going to illustrate how to configure the router quickly to let your PC access Internet.

Now check whether you have the screen below, if not, please re-log on to the router's management interface.



The device provides two Internet access ways: DSL Uplink and Ethernet Uplink. If you are using Ethernet Uplink (through network cable) for Internet access, please click the "Advanced Settings" on top right corner of the interface to enter the configuration interface and refer to section 2 of Chapter 4.2.2 WAN Service for configurations.

You need to configure the parameters below on this interface:

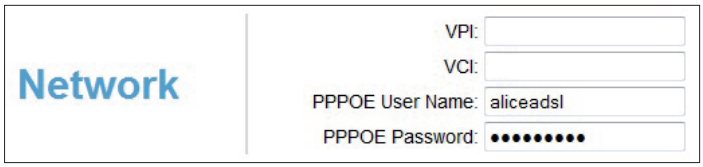
1. VPI/VCI
2. PPPOE User name
3. PPPOE Password

VPI/VCI: Different areas and ISPs have different VPI/VCI. For the convenience of its users, the device has integrated many important VPI/VCI. Therefore, you only need to select your ISP and area and the device will provide you with an auto-matched VPI/VCI in accordance with your area. However, if your ISP provides you with a special VPI/VCI, then select "Manual" for ISP option and enter the value manually.

PPPOE User name: the user name provided by your ISP; used together with password to authenticate the user.

PPPOE Password: the password provided by your ISP; used together with user name to authenticate the user.

For example: User A obtains a user name and a pass word, which are respectively aliceadsl and aliceadsl, from Telecom for ADSL broadband, so he/she needs to input the parameters as below:



Note: For the sake of security, password input on Web UI is displayed in encryption code.

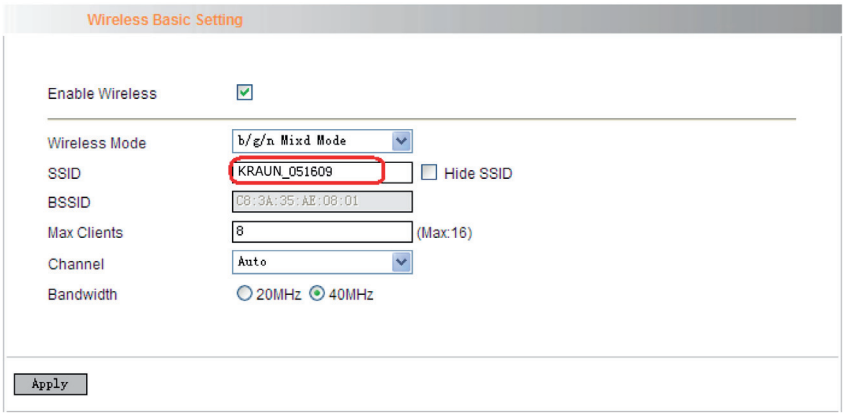
This product has support the wireless function: it is enabled by default the security encryption WPA.

The default Key is: KRAUN_KN.2R. We suggest you change it for security reasons after the first access.

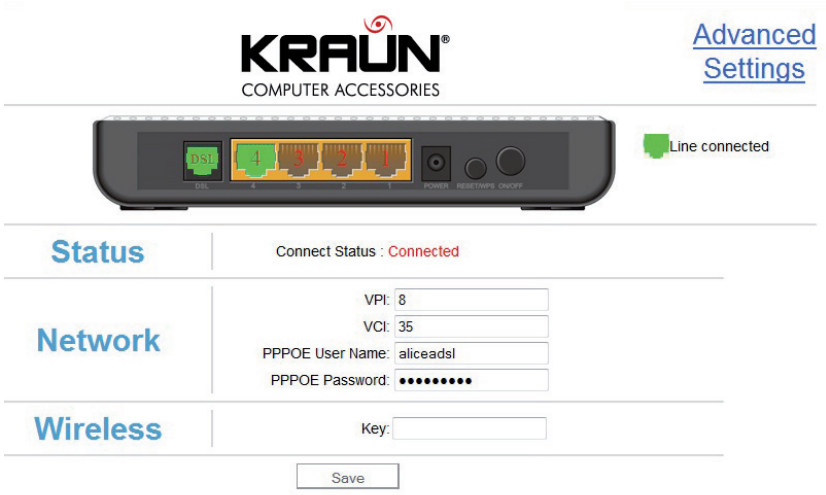
This can be from 8–63 characters of your choice, including spaces and punctuation.

Note:

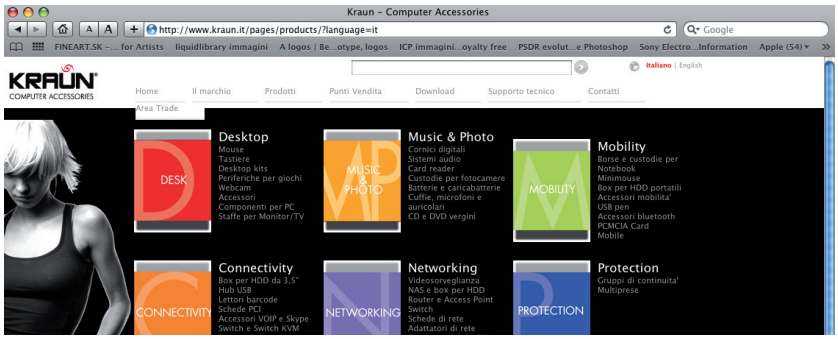
1. The wireless network name (SSID) of this device is "KRAUN_the last 6 characters of MAC address", for example, "KRAUN_051609". You can check it by clicking "Advanced Setup"------"Wireless"-------"Basic Setting" tabs.



After all settings are finished and status shows "Connected". Congratulations! You can access Internet now!



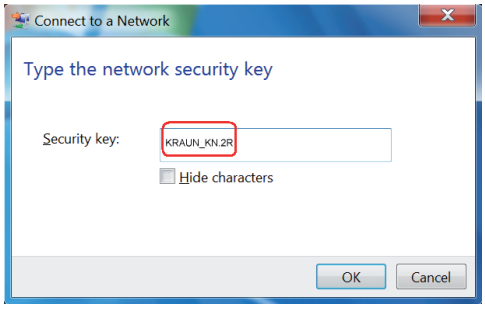
Launch a web browser; enter http://www.kraun.it in the address field and Internet access will be successful as below:



Now, try to use a wireless network adapter to search “KRAUN_051609”:

First, click (network adapter connection icon) to search wireless signals as shown in the figure below:

Then click “KRAUN_051609”select “Connect” to go to the dialogue box below:

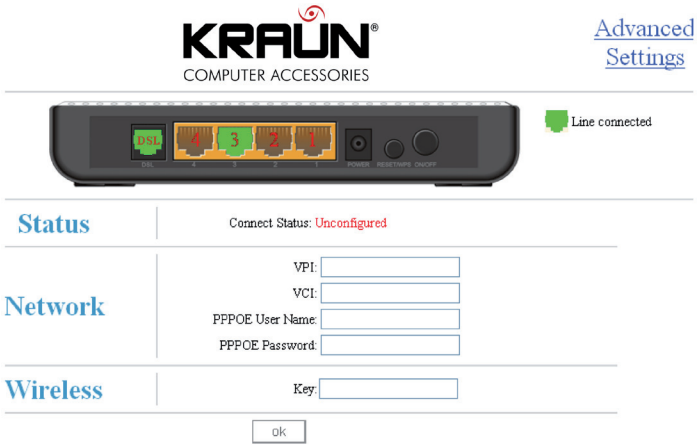


Enter the key: KRAUN_KN.2R and click “OK”; system will automatically connects with your wireless network in a while.

Advanced settings provide you more powerful functions such as filter, QoS and port range forwarding. Continue to read the “Advanced Settings” section below if necessary.

Chapter 4. Advanced Settings

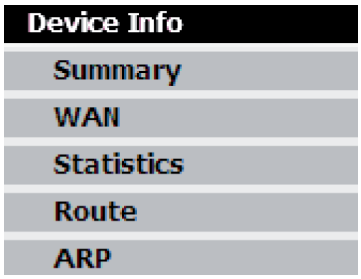
Enter the setup wizard screen below and then click “Advanced Settings” on the right top corner as shown in the figure below:



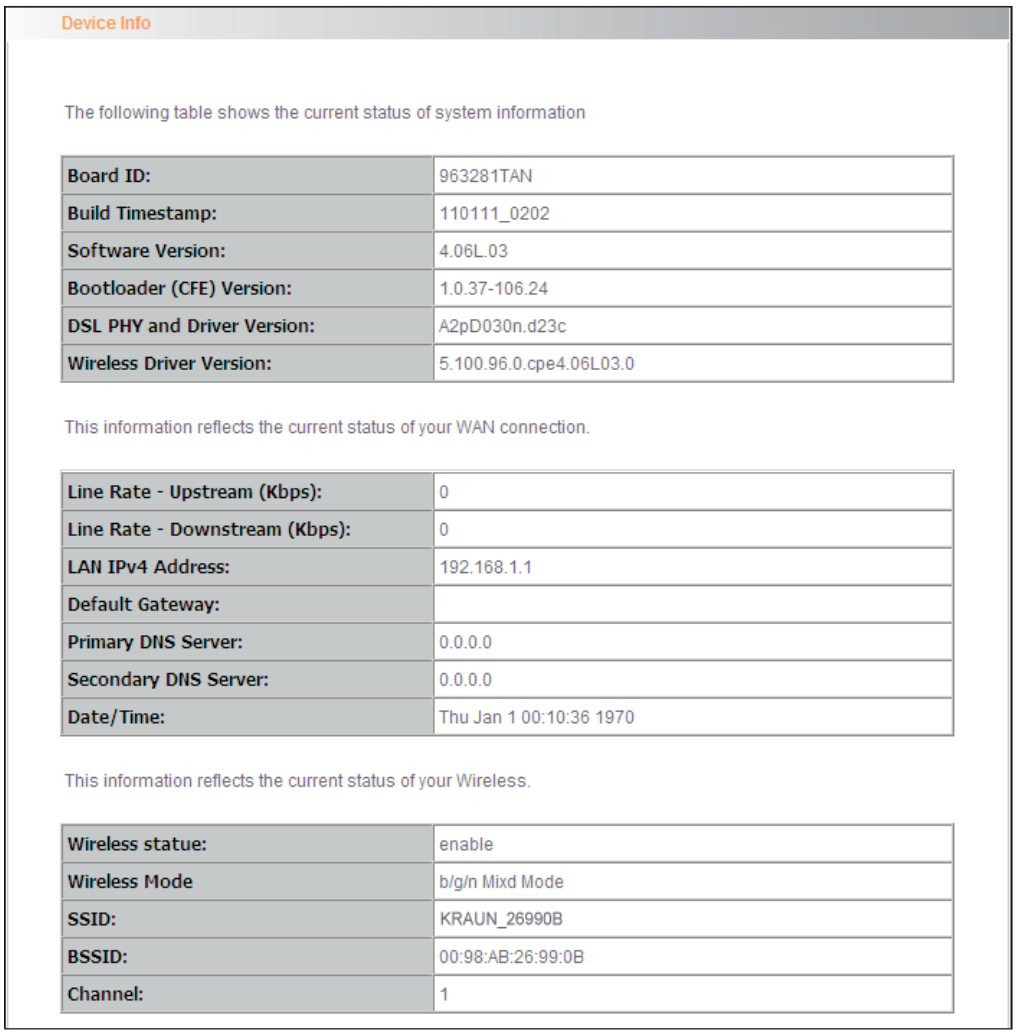
After you enter the advanced settings screen, you can set the advanced settings for the router to satisfy your requirements. There are seven main menus on this screen: Device Info, Advanced Setup, Wireless, Diagnostics, Management, Exit and Back to wizard as shown in the below picture.

4.1 Device Information

There are five submenus: Summary, WAN, Statistics, Route and ARP.



Summary: It displays system information, current status of WAN connection and Wireless as shown in the figure below:



Device Info

The following table shows the current status of system information

Board ID:	963281TAN
Build Timestamp:	110111_0202
Software Version:	4.06L.03
Bootloader (CFE) Version:	1.0.37-106.24
DSL PHY and Driver Version:	A2pD030n.d23c
Wireless Driver Version:	5.100.96.0.cpe4.06L03.0

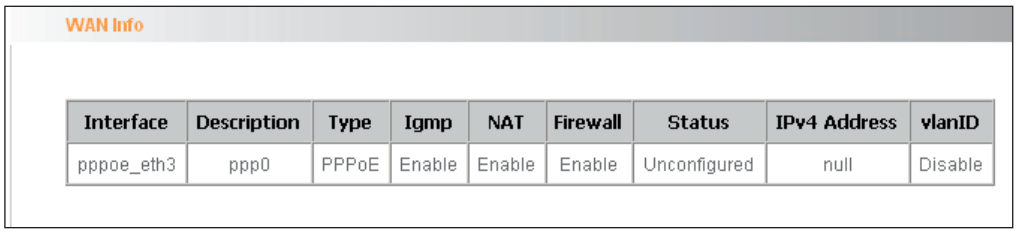
This information reflects the current status of your WAN connection.

Line Rate - Upstream (Kbps):	0
Line Rate - Downstream (Kbps):	0
LAN IPv4 Address:	192.168.1.1
Default Gateway:	
Primary DNS Server:	0.0.0.0
Secondary DNS Server:	0.0.0.0
Date/Time:	Thu Jan 1 00:10:36 1970

This information reflects the current status of your Wireless.

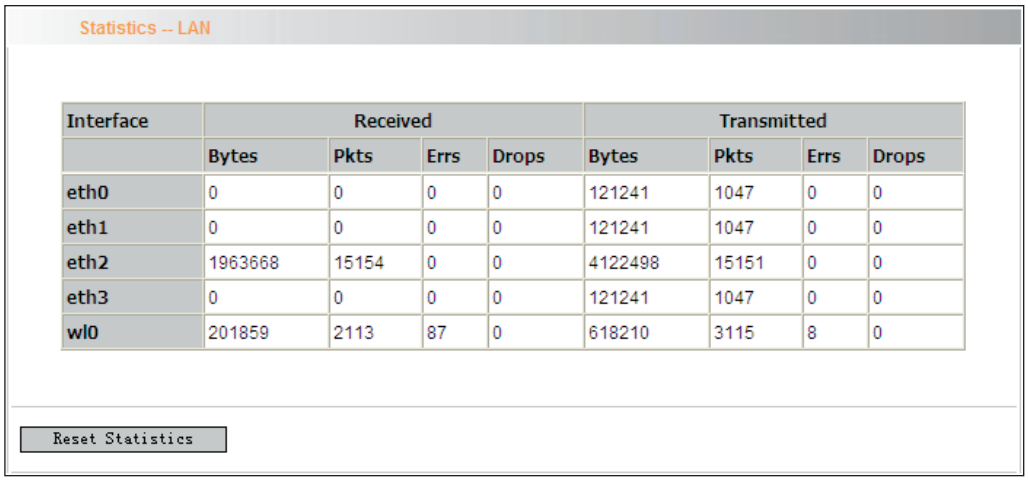
Wireless statue:	enable
Wireless Mode	b/g/n Mixd Mode
SSID:	KRAUN_26990B
BSSID:	00:98:AB:26:99:0B
Channel:	1

WAN: Click this menu to display the WAN information of this routing modem: Interface, Description, Type, Igmp, NAT, Firewall, Status, IPv4 Address and vlanID as shown in the figure below:



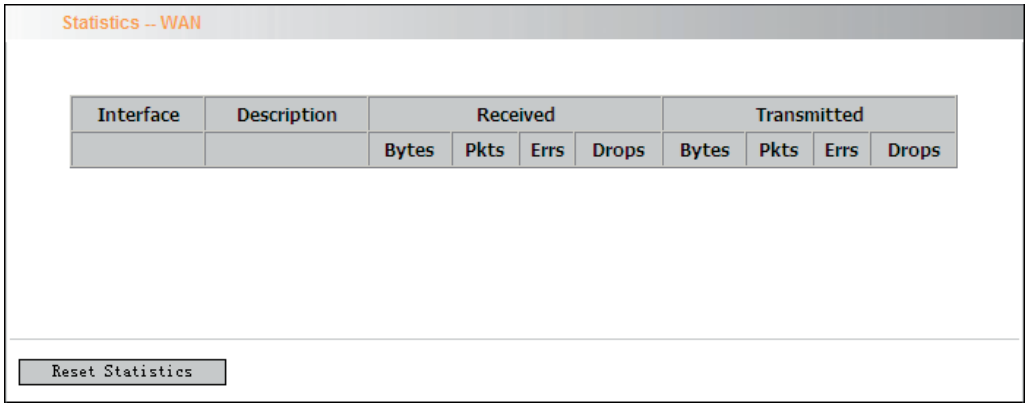
Statistics: It gathers the received and transmitted packets on LAN/WAN ports.

Statistics—LAN: It displays the received and transmitted packets of the device's LAN ports as shown in the figure below:

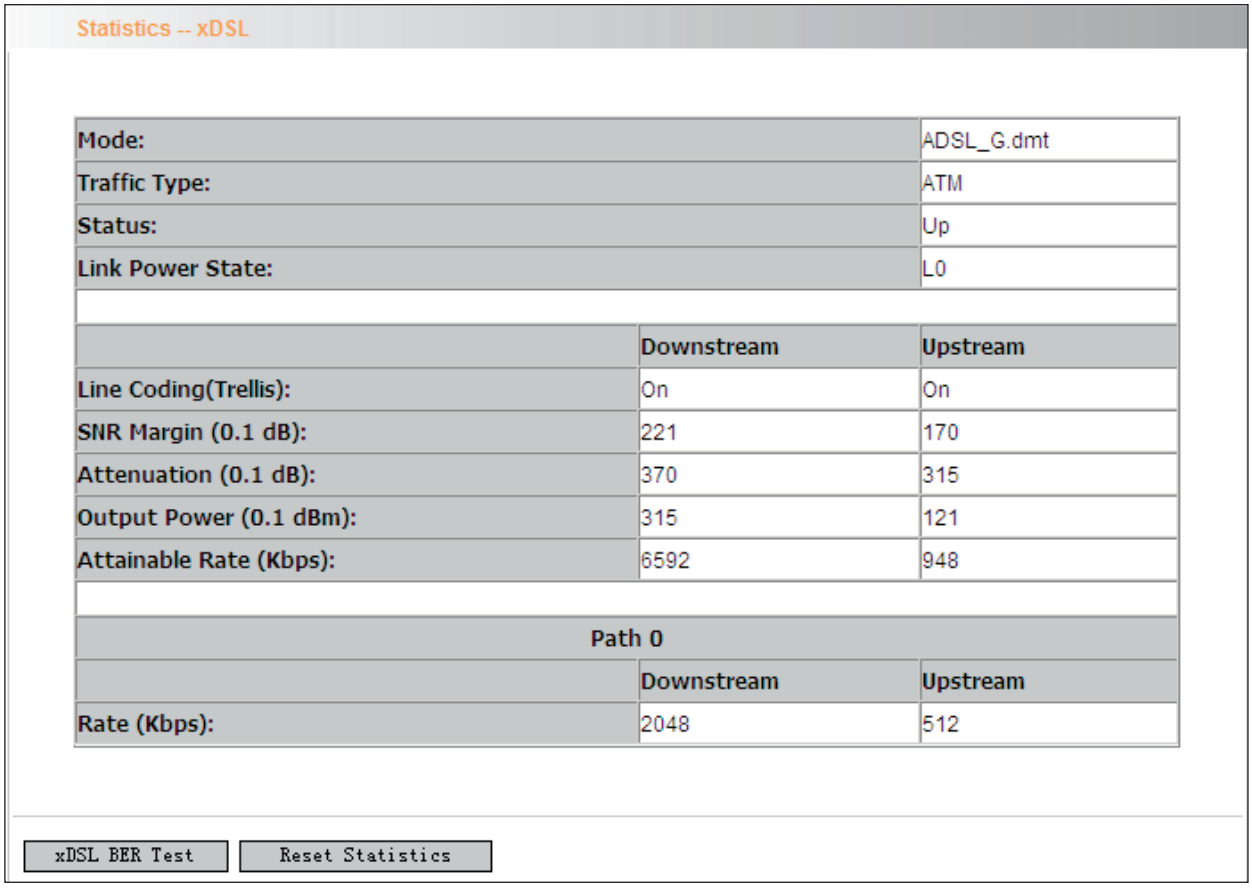


Note: eth0, eth1 and eth2 are respectively LAN port1, 2 and 3 of the device; and wl0 is a wireless port.

Statistics—WAN: It displays the received and transmitted packets of the device's WAN port as shown in the figure below:



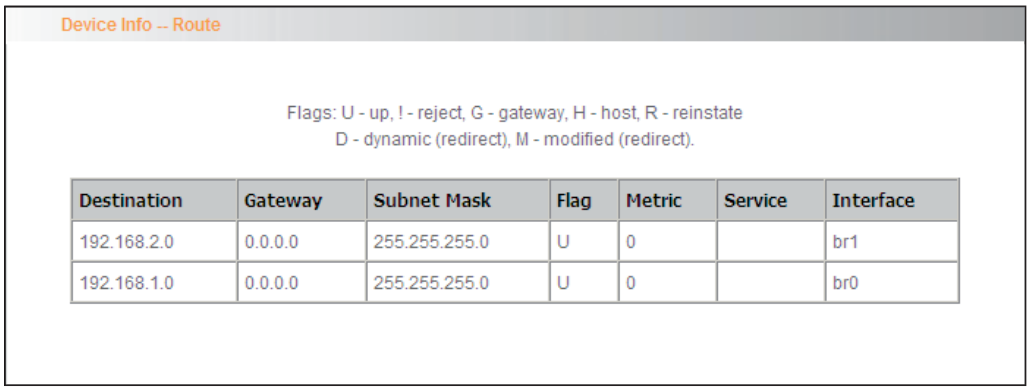
Statistics-xDSL: It displays statistic information of ADSL connection including mode, traffic type, status and other ADSL parameters as shown in the below figure:


Statistics -- xDSL

Mode:		ADSL_G.dmt
Traffic Type:		ATM
Status:		Up
Link Power State:		L0
	Downstream	Upstream
Line Coding(Trellis):	On	On
SNR Margin (0.1 dB):	221	170
Attenuation (0.1 dB):	370	315
Output Power (0.1 dBm):	315	121
Attainable Rate (Kbps):	6592	948
Path 0		
	Downstream	Upstream
Rate (Kbps):	2048	512

xDSL BER Test | Reset Statistics

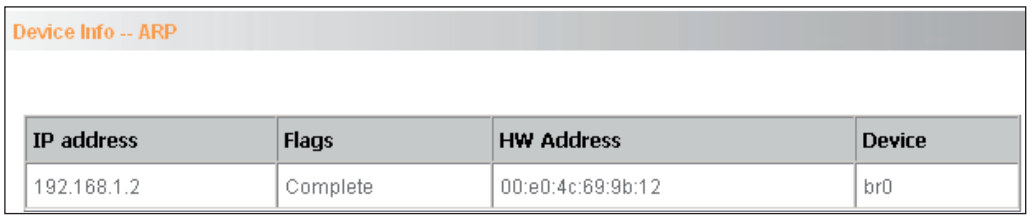
Route: displays routing table of the device as shown in the figure below:


Device Info -- Route

Flags: U - up, ! - reject, G - gateway, H - host, R - reinstate
D - dynamic (redirect), M - modified (redirect).

Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface
192.168.2.0	0.0.0.0	255.255.255.0	U	0		br1
192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0

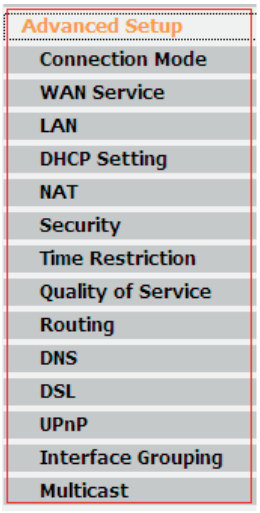
ARP: displays the device's LAN ports, IP and MAC addresses of the PCs that are wirelessly connected as shown in the figure below:


Device Info -- ARP

IP address	Flags	HW Address	Device
192.168.1.2	Complete	00:e0:4c:69:9b:12	br0

4.2 Advanced Setup

Advanced Setup: Consists of 14 submenus including Connection Mode/ WAN Service/LAN/DHCP Setting/NAT/Security/Time Restriction/Quality of Service/Routing/DNS/DSL/UPnP/ Interface Grouping and Multicast as shown in the figure below:



4.2.1 Connection mode

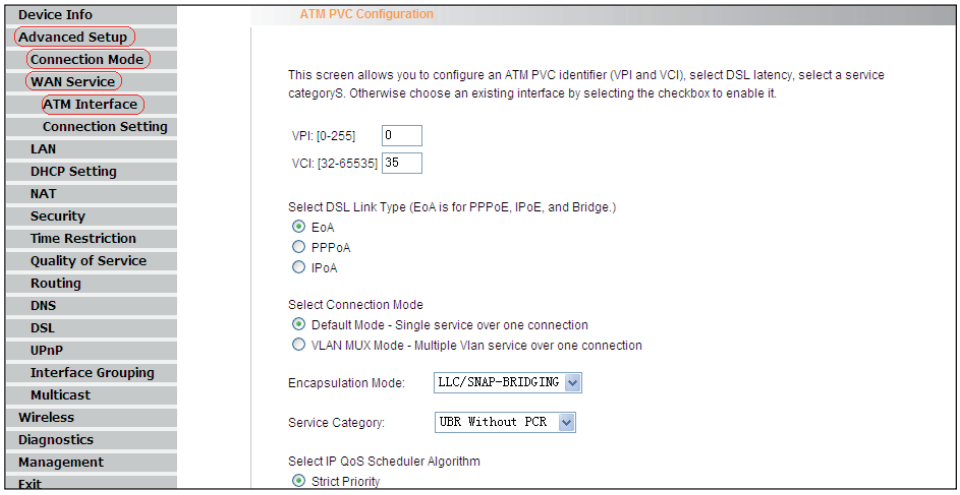
Connection Mode

This router supports two connection modes: DSL mode and Ethernet mode. Select DSL mode, if you access Internet through telephone line and Ethernet mode through network cable. By default, system is in DSL mode.

To enter the connection mode interface, click “Advanced Setup”---“Connection Mode”. Select a proper connection mode and then click the “Apply” button.

1. In DSL mode, you are required to configure parameters for ATM interface.

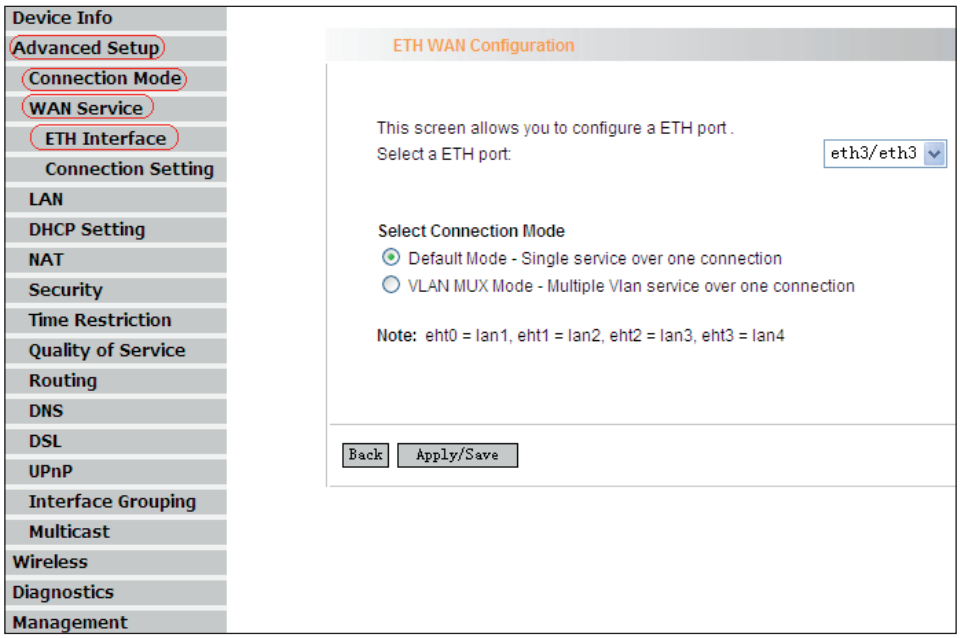
To enter the ATM Interface page, click “Advanced Setup”---“Connection Mode” (Select DSL mode and click “Apply”) --- “WAN Service”---ATM Interface. And then click “Add” to configure the relevant parameters.



On this page, you can configure VPI and VCI values (consult your local ISP if you are not clear). For other options, keep the defaults and click the “Apply/Save” button.

2. In Ethernet modes, you are required to configure parameters for Ethernet interface.

To enter the ETH Interface page, click “Advanced Setup”---“Connection Mode” (Select Ethernet mode and click “Apply”) --- “WAN Service”---“ETH Interface”. And then click the “Add” button to configure relevant parameters.



The Ethernet interface configured on this page is used as a WAN port. You can select only one LAN interface to function as a WAN port. Once you finish, click the "Apply/Save" button.

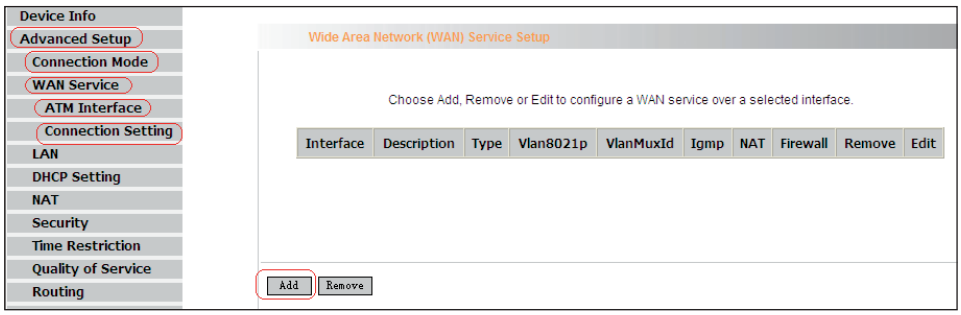
4.2.2 WAN Service

1. WAN Configuration in DSL Mode

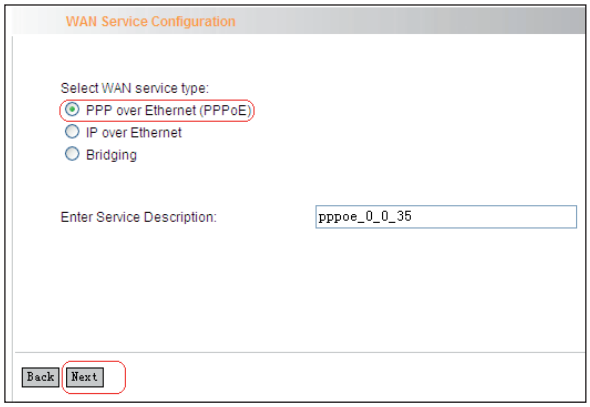
PPP over Ethernet (PPPoE)

Click "Advanced Setup"—"Connection mode"(Select DSL mode and click "Apply")---"WAN Service"---"ATM Interface" (Keep default DSL link type EOA unchanged,

and click the "Apply/Save" button. For details, refer to 4.2.1----1) ---"Connection Setting" to enter WAN service setup interface (page1) and then click the "Add" button there to select a WAN service type on page 2.

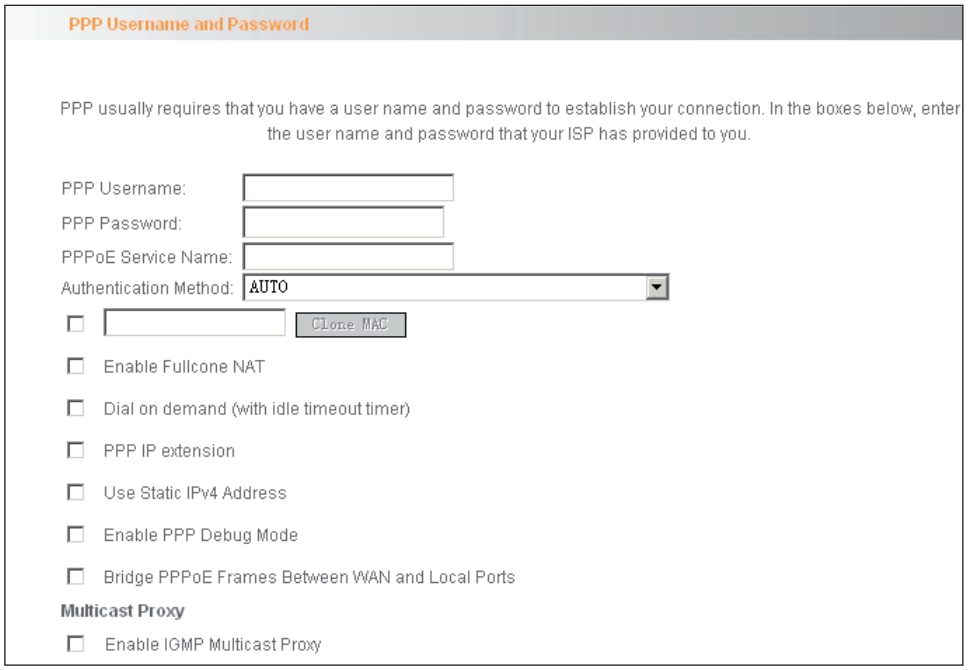


Page 1



Page 2

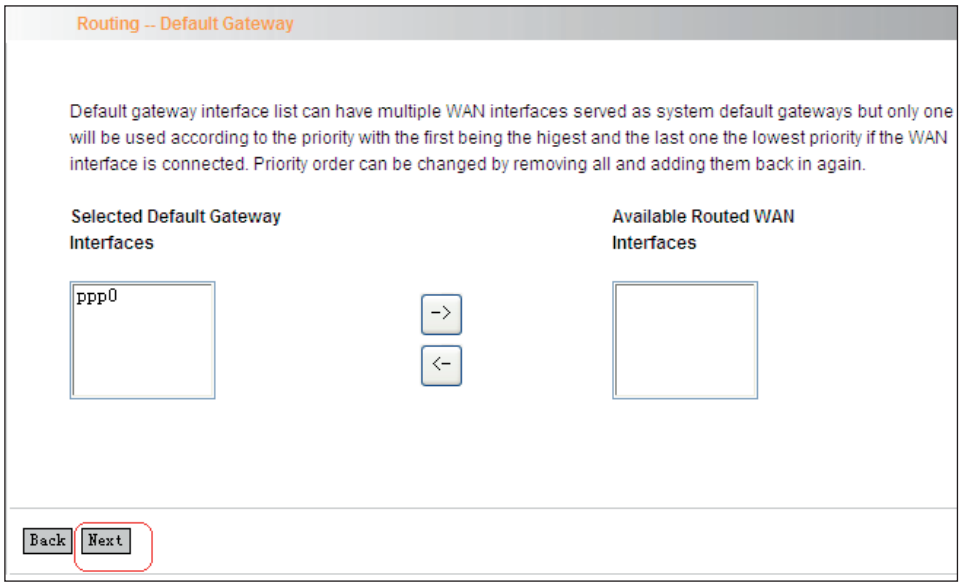
Select PPP over Ethernet (PPPoE), modify the service description if necessary and then click "Next" on page 2 to enter the page below (page 3):


PPP Username and Password
PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.
PPP Username:
PPP Password:
PPPoE Service Name:
Authentication Method:
AUTO
Clone MAC
Enable Fullcone NAT
Dial on demand (with idle timeout timer)
PPP IP extension
Use Static IPv4 Address
Enable PPP Debug Mode
Bridge PPPoE Frames Between WAN and Local Ports
Multicast Proxy
Enable IGMP Multicast Proxy

Page 3

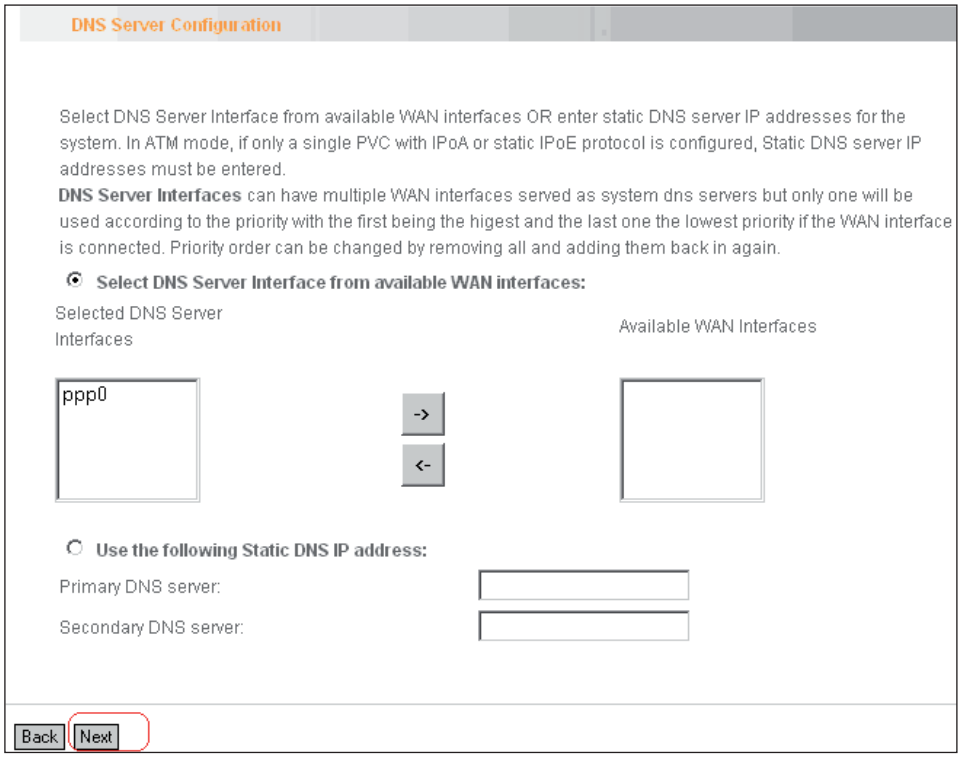
- **PPP User Name:** User name for PPPoE dialup. It is provided by your ISP.
- **PPP Password:** The password provided by your ISP for PPPoE dialup.
- **PPPoE Service Name:** It is provided by your ISP. Do not fill it in if you don't have it; otherwise PPPoE dialup may fail.
- **Authentication Method:** It is used by ISP to verify its clients during PPPoE dialup. Select "Auto" if you are not sure about it.
- **Clone MAC:** This feature clones the MAC address of the PC that is currently entering the router's management page to work as the WAN MAC address of the router.
- **Dial on Demand:** Automatically connects or disconnects Internet according to the use of the network. It is recommended when your ISP limits network use time.
- **PPP IP extension:** The IP addresses of all packets including management packets that egress WAN port will be converted to the WAN port's IP address once this feature is enabled.
- **Enable PPP Debug Mode:** This feature can be enabled only when supported by your ISP.
- **Bridge PPPoE Frames Between WAN and Local Ports:** PPPoE dialup frame initiated by LAN port will directly egress WAN port without being modified if this feature is enabled.
- **Multicast Proxy:** Router enables multicast proxy server if this feature is enabled.

Enter the PPP user name and PPP Password provided by your ISP. For other options, keep the default values if you are not clear about them, and then click the "Next" button to display the following screen (page 4):


Routing -- Default Gateway
Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Selected Default Gateway Interfaces
Available Routed WAN Interfaces
ppp0
->
<-
Back
Next

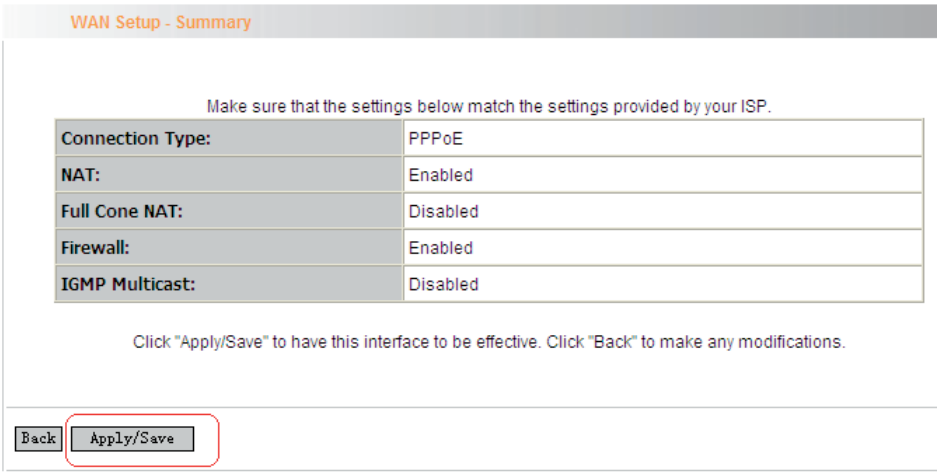
Page 4

This page allows you to configure the gateway address for WAN connection. We recommend you to keep the default values and click the "Next" button on page 4 to enter the following page (page 5):


DNS Server Configuration
Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Select DNS Server Interface from available WAN interfaces:
Selected DNS Server Interfaces
Available WAN Interfaces
ppp0
->
<-
Use the following Static DNS IP address:
Primary DNS server:
Secondary DNS server:
Back
Next

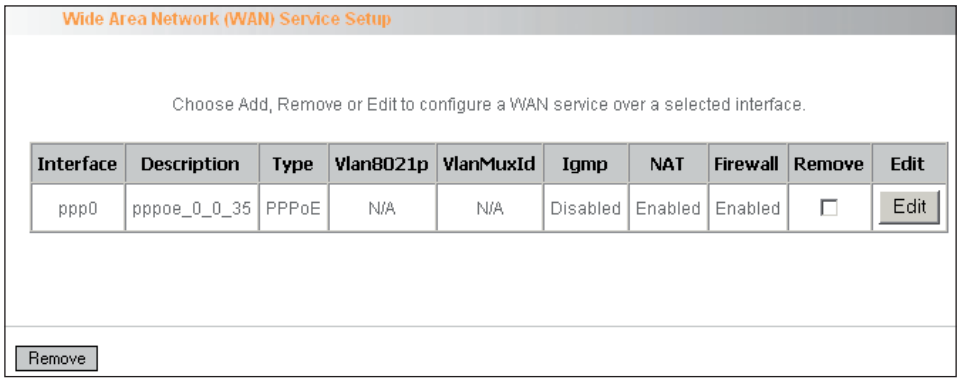
page 5

This page allows you to configure the DNS server's IP address for the WAN port. We recommend you to keep the default values if you are not clear about it and click the "Next" button (on page 5) to enter the following page (page 6):


WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
Connection Type: PPPoE
NAT: Enabled
Full Cone NAT: Disabled
Firewall: Enabled
IGMP Multicast: Disabled
Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.
Back
Apply/Save

Page 6

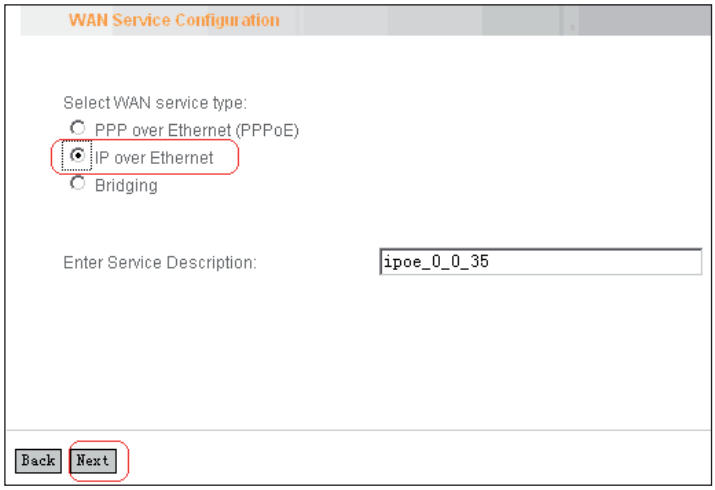
This page displays the configuration information. After confirmation, please click "Apply/Save" to save it.


Wide Area Network (WAN) Service Setup
Choose Add, Remove or Edit to configure a WAN service over a selected interface.
Interface Description Type Vlan8021p VlanMuxId Igmp NAT Firewall Remove Edit
ppp0 pppoe_0_0_35 PPPoE N/A N/A Disabled Enabled Enabled Edit
Remove

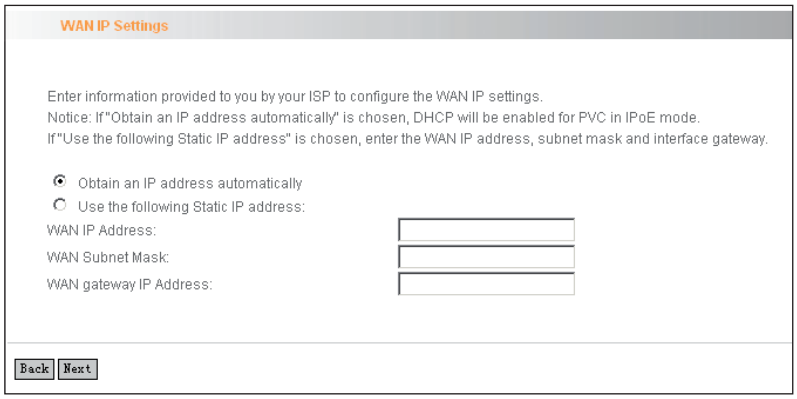
You can access Internet once PPPoE dialup succeeds.

IP over Ethernet

When your ISP provides you an IP address or tells you that you only need to configure your PC to obtain an IP address automatically to access Internet, you need to select IP over Ethernet IPoE as the WAN service type.

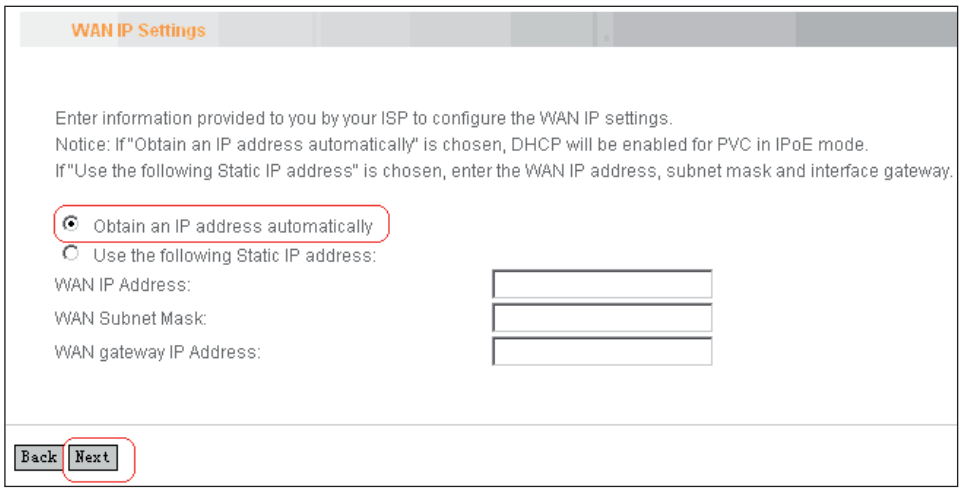


Modify the service description if necessary and then click the “Next” button:

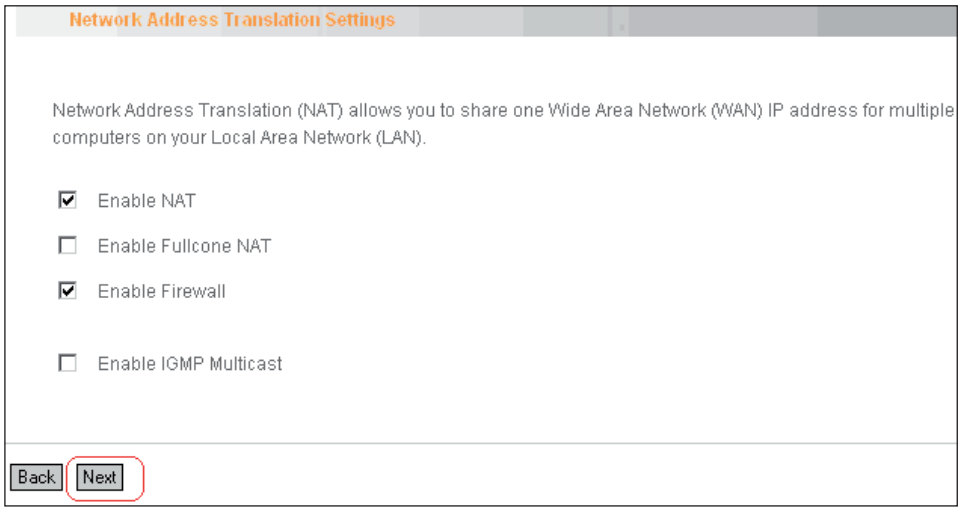

WAN IP Settings
Enter information provided to you by your ISP to configure the WAN IP settings.
Notice: If "Obtain an IP address automatically" is chosen, DHCP will be enabled for PVC in IPoE mode.
If "Use the following Static IP address" is chosen, enter the WAN IP address, subnet mask and interface gateway.
Obtain an IP address automatically
Use the following Static IP address:
WAN IP Address:
WAN Subnet Mask:
WAN gateway IP Address:
Back
Next

- **Obtain an IP address automatically:** WAN port will automatically obtain an IP address for accessing Internet from the ISP, if this feature is selected.
- **Use the following Static IP address:** select this feature if your ISP provides you an IP address.
- **WAN IP Address:** the IP address provided by your ISP for accessing Internet.
- **WAN Subnet Mask:** the subnet mask address provided by your ISP for accessing Internet.
- **WAN gateway IP Address:** the gateway IP address provided by your ISP for accessing Internet.

Enter the IP/ subnet mask/gateway IP address provided by your ISP or select “Obtain an IP address automatically” and click the “Next” button (on page 1) to enter page 2 below:

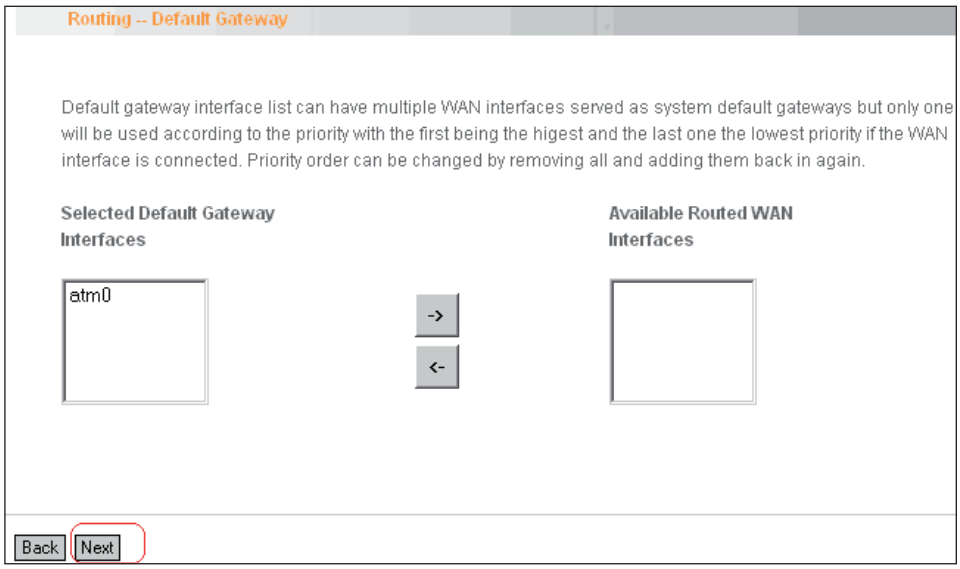

WAN IP Settings
Enter information provided to you by your ISP to configure the WAN IP settings.
Notice: If "Obtain an IP address automatically" is chosen, DHCP will be enabled for PVC in IPoE mode.
If "Use the following Static IP address" is chosen, enter the WAN IP address, subnet mask and interface gateway.
Obtain an IP address automatically
Use the following Static IP address:
WAN IP Address:
WAN Subnet Mask:
WAN gateway IP Address:
Back
Next

Page 1


Network Address Translation Settings
Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).
Enable NAT
Enable Fullcone NAT
Enable Firewall
Enable IGMP Multicast
Back
Next

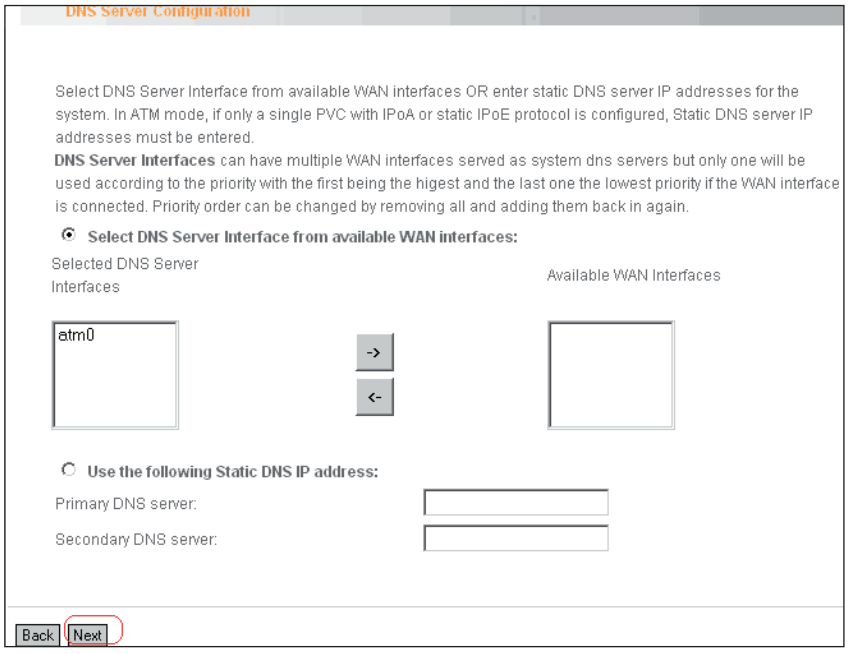
Page 2

We recommend you to keep the default settings unchanged and click the “Next” button (on page 2) to enter the screen (page 3) below:


Routing -- Default Gateway
Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Selected Default Gateway Interfaces
Available Routed WAN Interfaces
atm0
->
<-
Back
Next

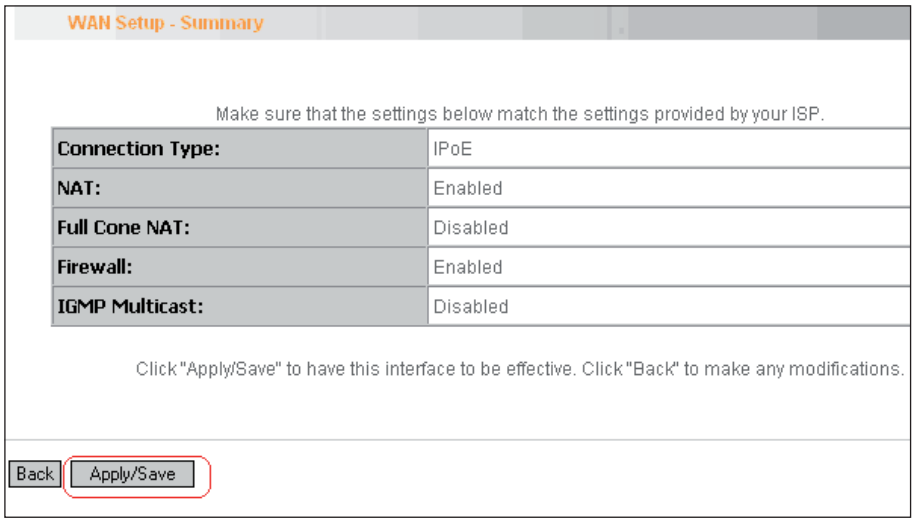
Page 3

This page allows you to configure the gateway address for WAN connection. We recommend you to keep the default values and click the “Next” button (on page 3) to enter the following page (page 4):


DNS Server Configuration
Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Select DNS Server Interface from available WAN interfaces:
Selected DNS Server Interfaces
Available WAN Interfaces
atm0
->
<-
Use the following Static DNS IP address:
Primary DNS server:
Secondary DNS server:
Back
Next

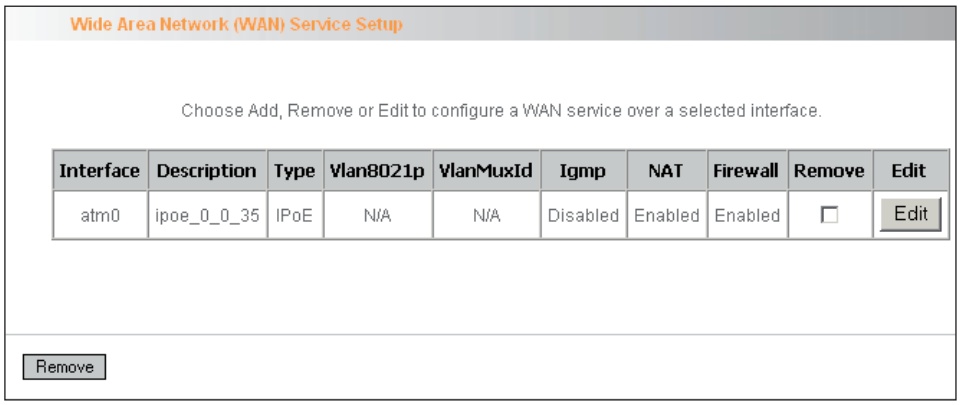
Page 4

This page allows you to configure the DNS server's IP address for the WAN port. We recommend you to keep the default values if you are not clear about it and click the "Next" button (on page 4) to enter the following page (page 5):


WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
Connection Type: IPoE
NAT: Enabled
Full Cone NAT: Disabled
Firewall: Enabled
IGMP Multicast: Disabled
Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.
Back
Apply/Save

Page 5

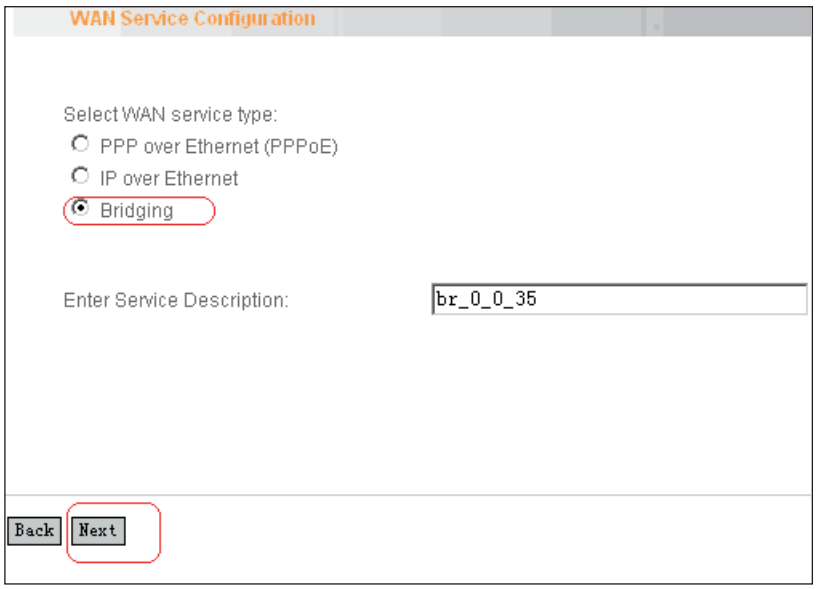
This page displays the configuration information. After confirmation, please click "Apply/Save" to save it.


Wide Area Network (WAN) Service Setup
Choose Add, Remove or Edit to configure a WAN service over a selected interface.
Interface Description Type Vlan8021p VlanMuxId Igmp NAT Firewall Remove Edit
atm0 ipoe_0_0_35 IPoE N/A N/A Disabled Enabled Enabled
Edit
Remove

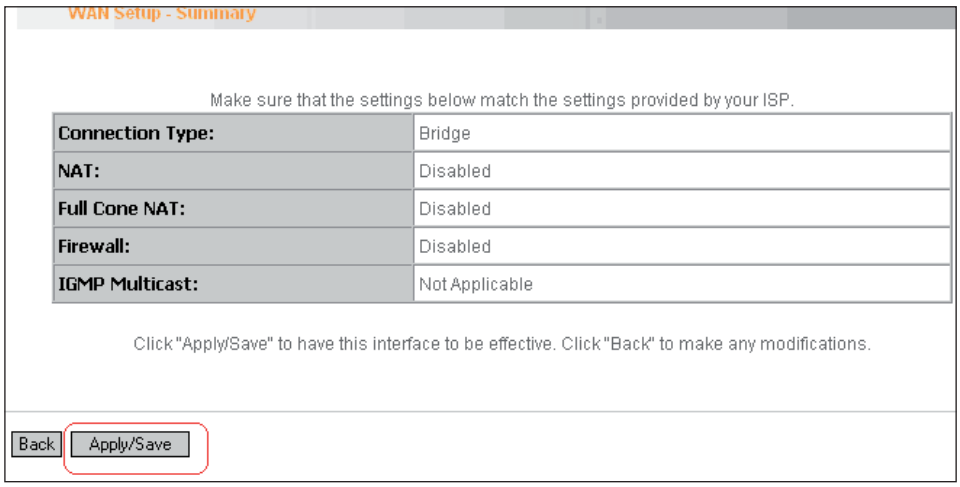
You can access Internet once the configured connection succeeds.

Bridging

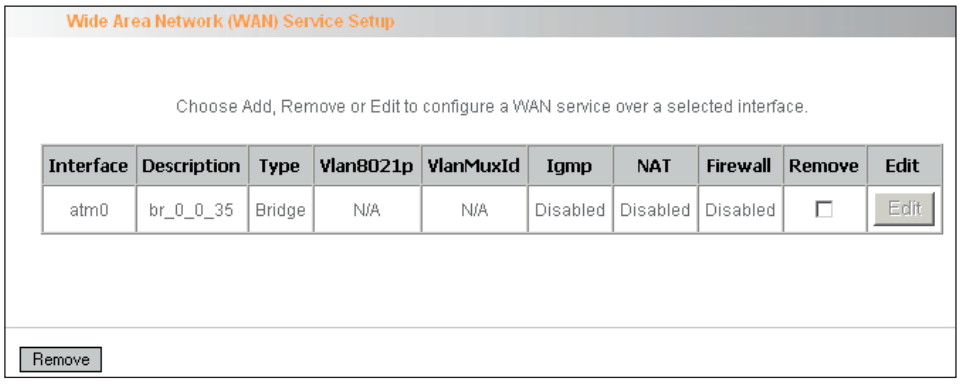
If you want to use your PC or other devices to execute dialup or you do not want to share your broadband service with other users, you can first configure your router's WAN service type as bridging and then use your PC or other devices for dialup connection.



Modify the service description if necessary and then click "Next".


WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
Connection Type: Bridge
NAT: Disabled
Full Cone NAT: Disabled
Firewall: Disabled
IGMP Multicast: Not Applicable
Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.
Back
Apply/Save

This page displays the configuration information. After confirmation, please click "Apply/Save" to save it.

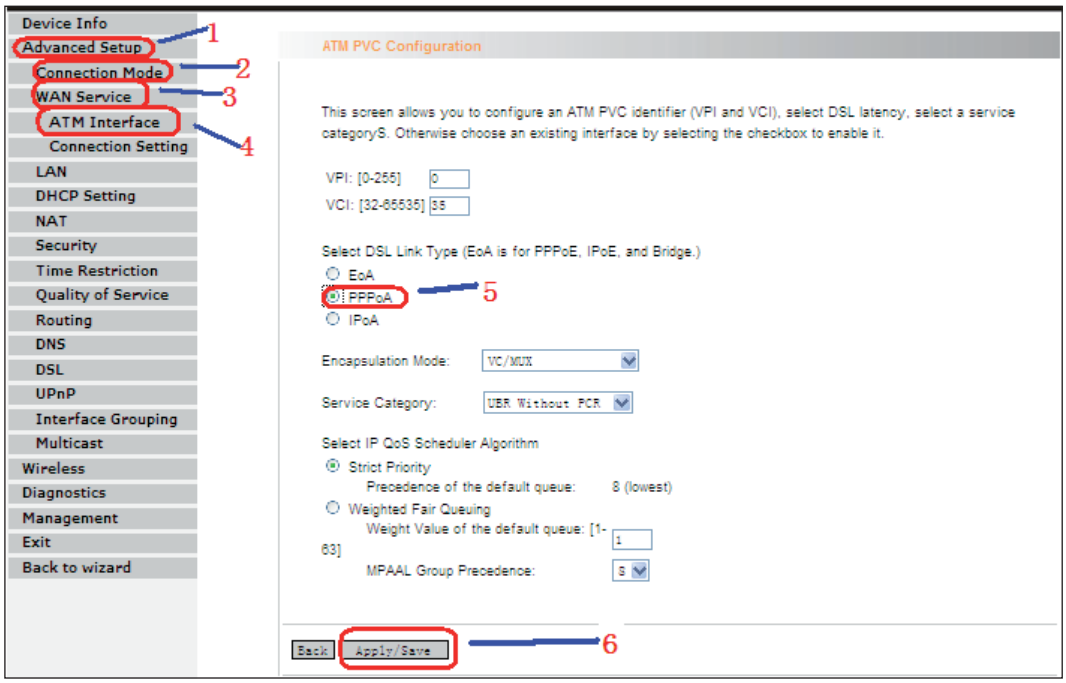

Wide Area Network (WAN) Service Setup
Choose Add, Remove or Edit to configure a WAN service over a selected interface.
Interface Description Type Vlan8021p VlanMuxId Igmp NAT Firewall Remove Edit
atm0 br_0_0_35 Bridge N/A N/A Disabled Disabled Disabled Edit
Remove

After successful configurations, use your PC or other devices to dialup and then you can access Internet.

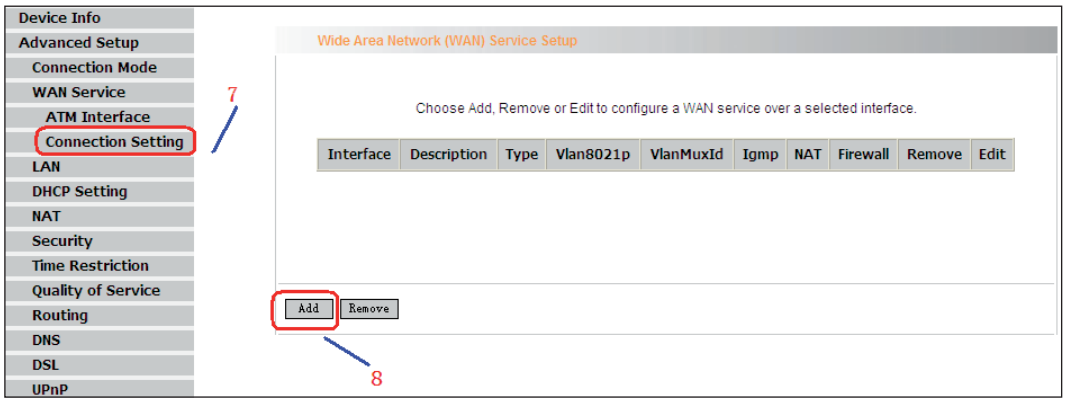
Note: When you need to configure several WAN connections (multiple PVCs), first configure the needed number of ATM interfaces and then follow the above corresponding configuration procedures.

PPPOA

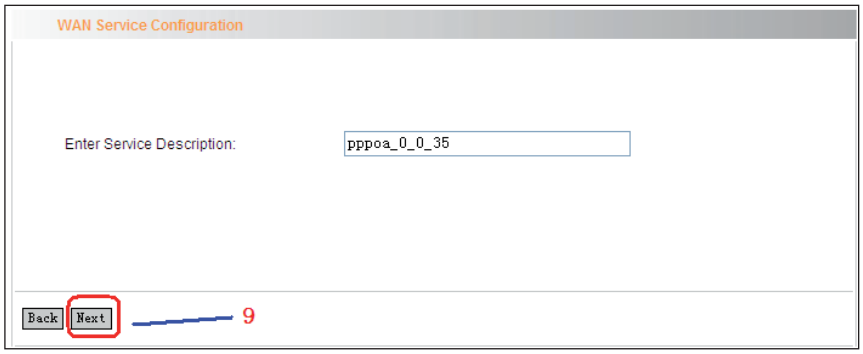
First, click "Advanced Setup"—"Connection Mode" (select DSL Mode and click "Apply")----"WAN Service"---"ATM Interface" to enter ATM PVC Configuration interface; Then select PPPoA and click "Apply/Save" there as shown in the figure below:



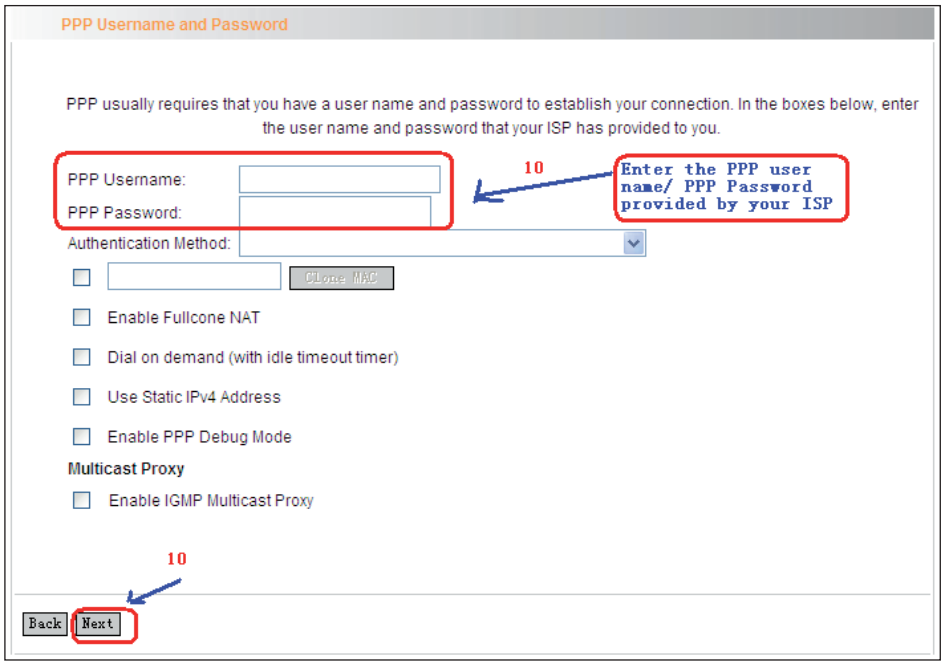
Click "Connection Setting" to enter WAN service setup interface



Click the "Add" button.

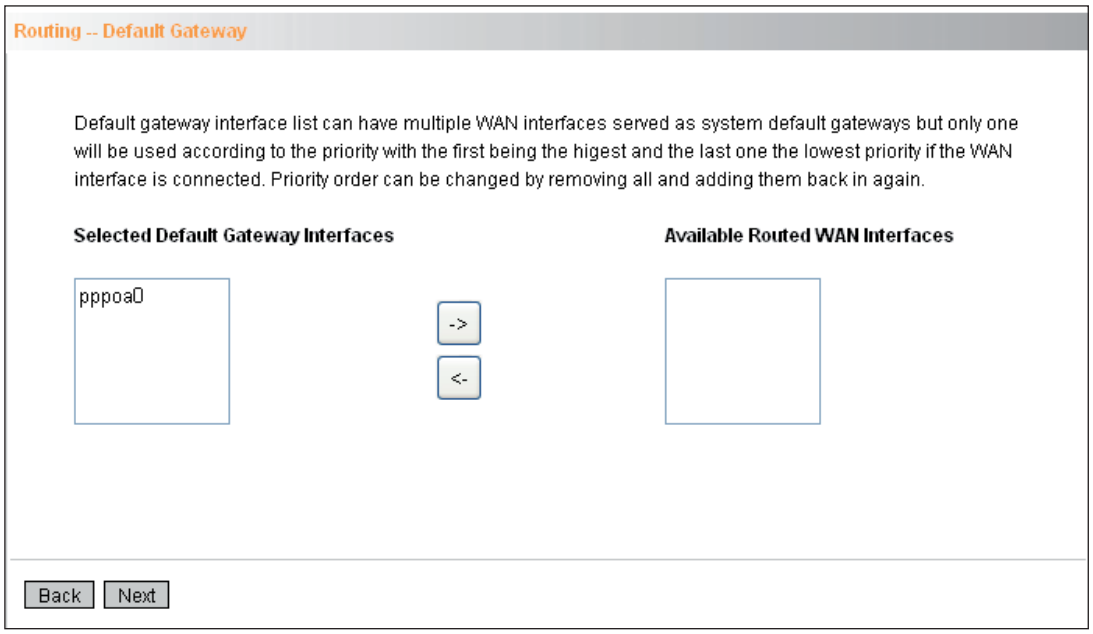


Modify the Service description if necessary and click “next”.

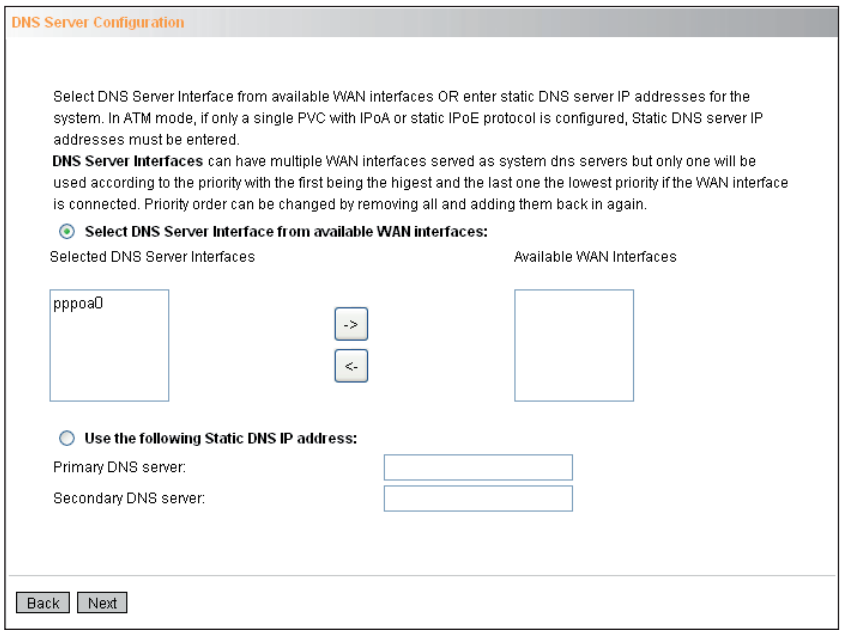

PPP Username and Password
PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.
PPP Username:
PPP Password:
10
Enter the PPP user name/ PPP Password provided by your ISP
Authentication Method:
Clone MAC
Enable Fullcone NAT
Dial on demand (with idle timeout timer)
Use Static IPv4 Address
Enable PPP Debug Mode
Multicast Proxy
Enable IGMP Multicast Proxy
10
Back
Next

- **PPP User Name**: User name for PPPoA dialup. It is provided by your ISP.
- **PPP Password:** The password provided by your ISP for PPPoA dialup.
- **Authentication Method:** It is used by ISP to verify its clients during PPPoA dialup. Select “Auto” if you are not sure about it.
- **Clone MAC:** This feature clones the MAC address of the PC that is currently entering the router’s management page to work as the WAN MAC address of the router.
- **Dial on Demand**: Automatically connects or disconnects Internet according to the use of the network. It is recommended when your ISP limits network use time.
- **Enable PPP Debug Mode:** This feature can be enabled only when supported by your ISP.
- Multicast Proxy: Router enables multicast proxy server if this feature is enabled.

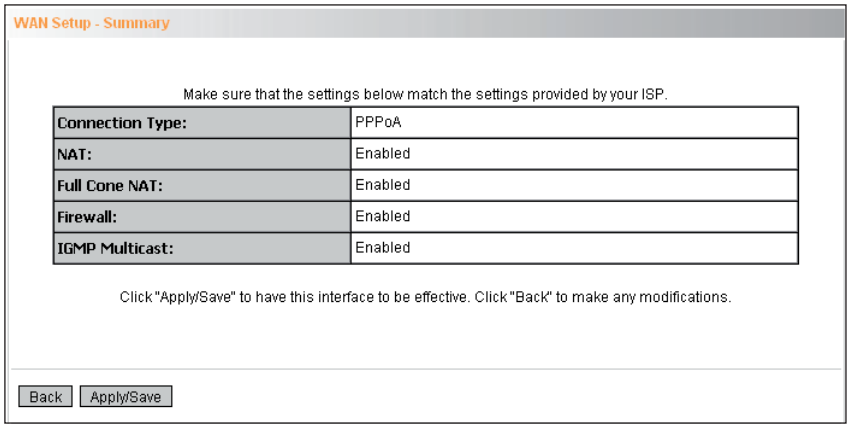
Enter the PPP user name and PPP Password provided by your ISP. For other options, keep the default values if you are not clear about them, and then click the “Next” button to display the following screen:


Routing -- Default Gateway
Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Selected Default Gateway Interfaces
Available Routed WAN Interfaces
pppoa0
->
<-
Back
Next

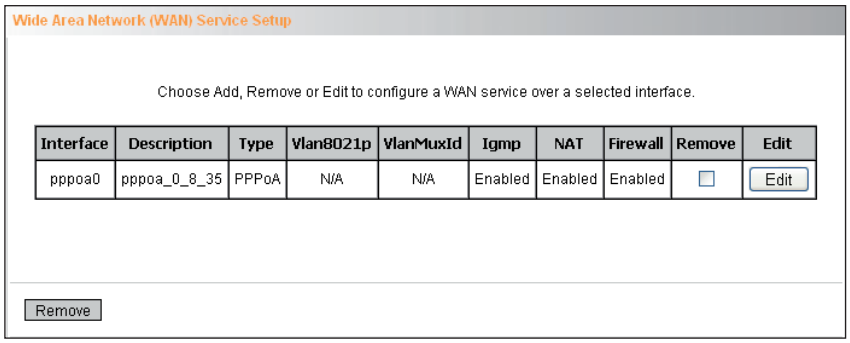
This page allows you to configure the gateway address for WAN connection. We recommend you to keep the default values and click the “Next” button to enter the following page:


DNS Server Configuration
Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Select DNS Server Interface from available WAN interfaces:
Selected DNS Server Interfaces
Available WAN Interfaces
pppoa0
->
<-
Use the following Static DNS IP address:
Primary DNS server:
Secondary DNS server:
Back
Next

This page allows you to configure the DNS server's IP address for the WAN port. We recommend you to keep the default values if you are not clear about it and click the "Next" button to enter the following page:


WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
Connection Type: PPPoA
NAT: Enabled
Full Cone NAT: Enabled
Firewall: Enabled
IGMP Multicast: Enabled
Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.
Back
Apply/Save

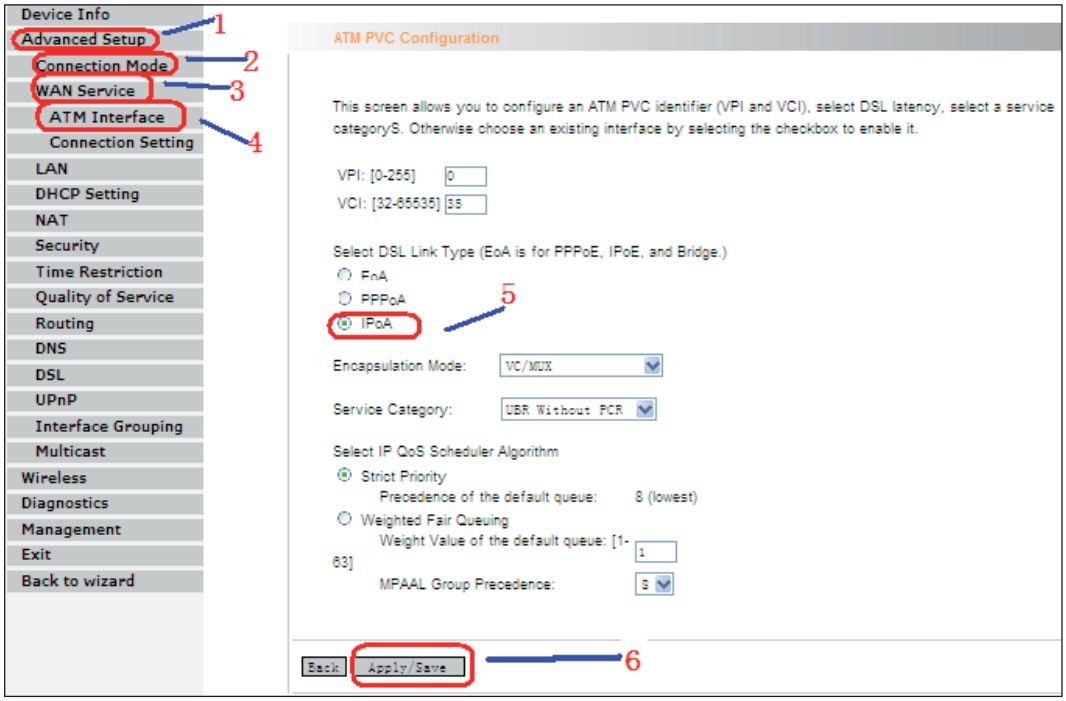
This page displays the configuration information. After confirmation, please click "Apply/Save" to save it.


Wide Area Network (WAN) Service Setup
Choose Add, Remove or Edit to configure a WAN service over a selected interface.
Interface Description Type Vlan8021p VlanMuxId Igmp NAT Firewall Remove Edit
pppoa0 pppoa_0_8_35 PPPoA N/A N/A Enabled Enabled Enabled
Edit
Remove

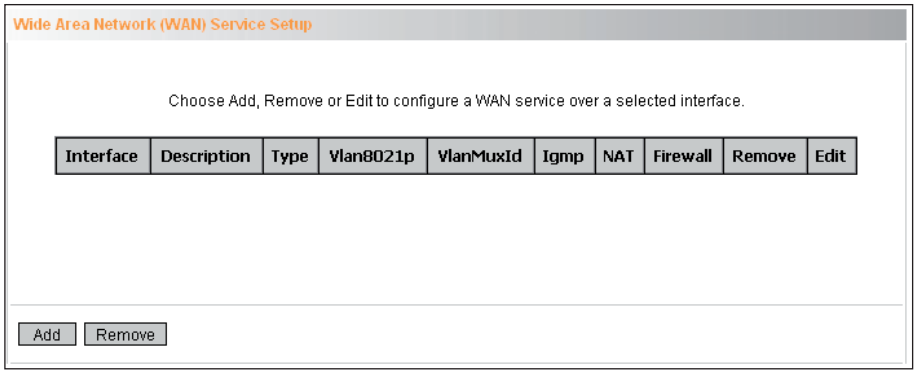
You can access Internet once PPPoA dialup succeeds.

IPOA

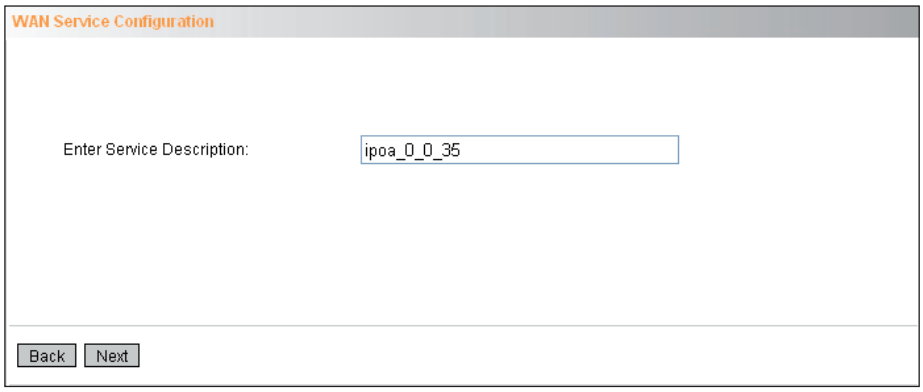
First, click “Advanced Setup”—“Connection Mode” (select DSL Mode and click “Apply”)----“WAN Service”---“ATM Interface” to enter ATM PVC Configuration interface; Then select PPPoA and click “Apply/Save” there as shown in the figure below:



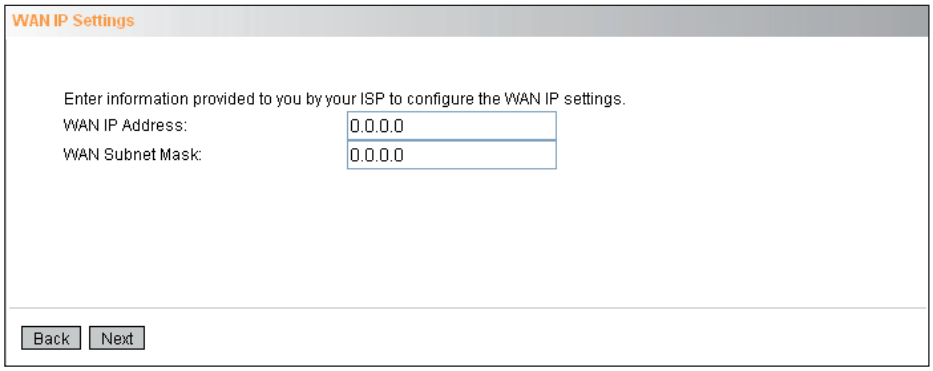
Click “Connection Setting” to enter WAN service setup interface



Click the “Add” button

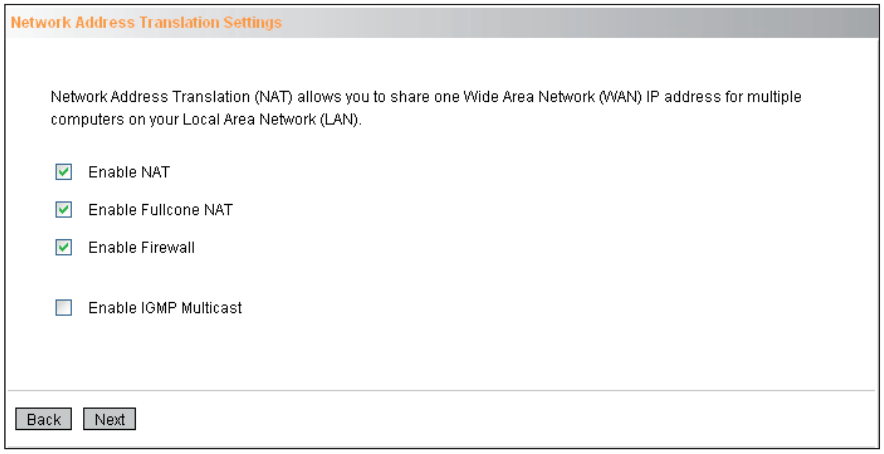


Modify the service description if necessary and then click the “Next” button:

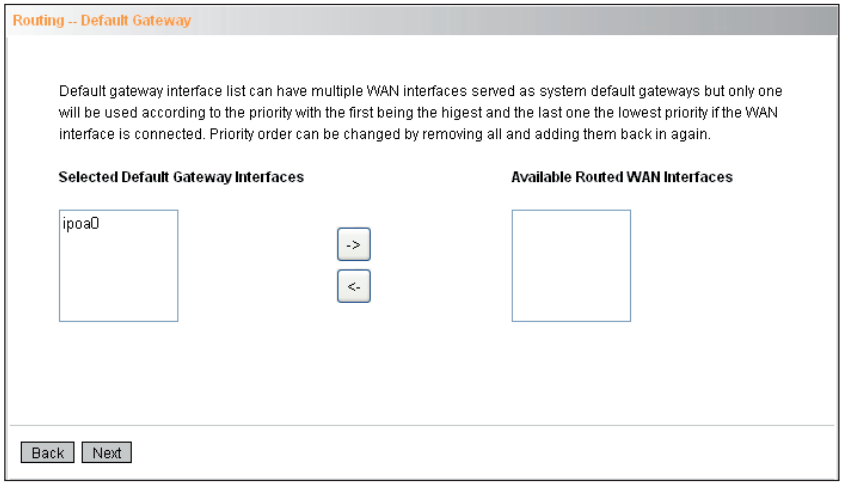


- WAN IP Address: the IP address provided by your ISP for accessing Internet.
- WAN Subnet Mask: the subnet mask address provided by your ISP for accessing Internet.

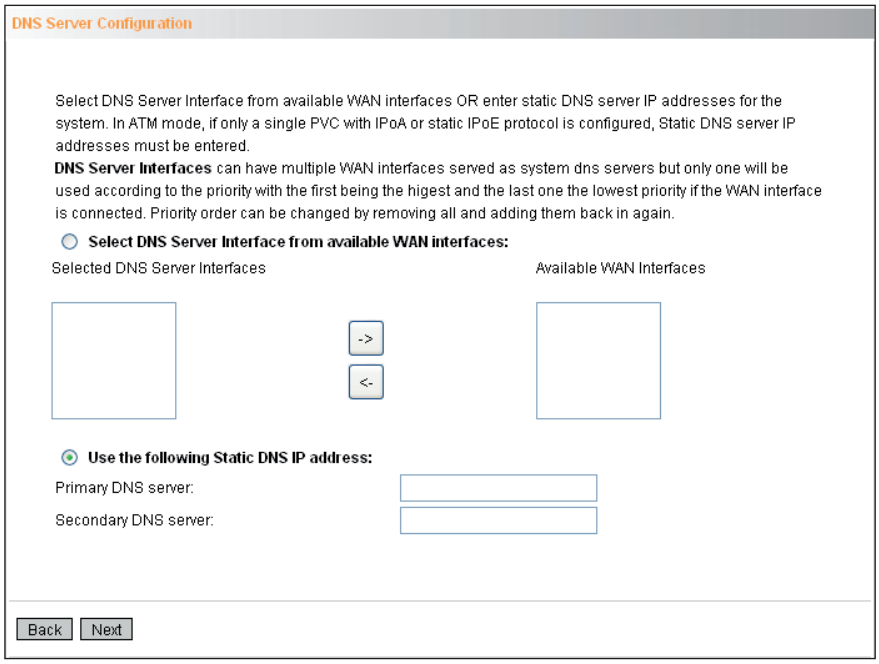
Enter the IP/ subnet mask provided by your ISP and click the “Next” button:


Network Address Translation Settings
Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).
Enable NAT
Enable Fullcone NAT
Enable Firewall
Enable IGMP Multicast
Back
Next

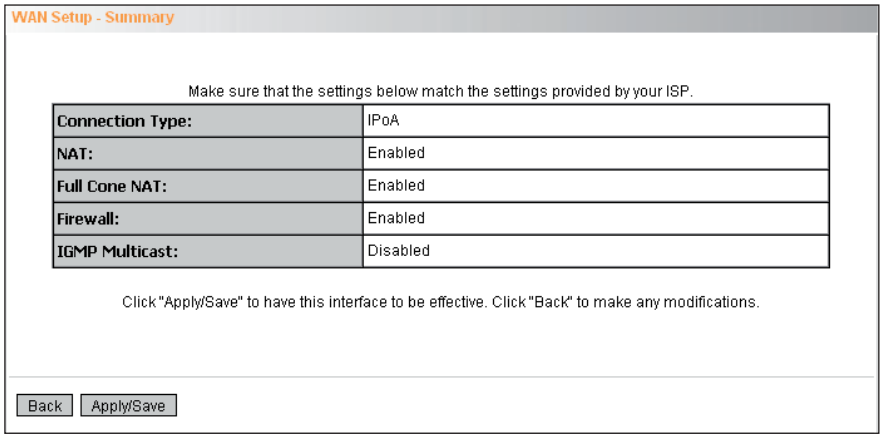
We recommend you to keep the default settings unchanged and click the “Next” button:


Routing -- Default Gateway
Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Selected Default Gateway Interfaces
Available Routed WAN Interfaces
ipoa0
->
<-
Back
Next

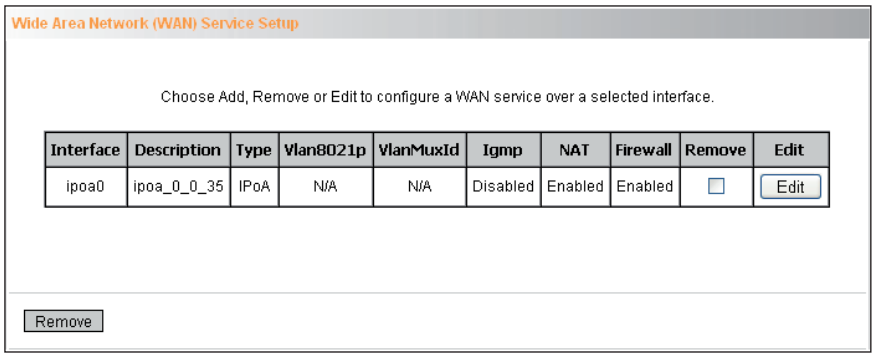
This page allows you to configure the gateway address for WAN connection. We recommend you to keep the default values and click the “Next” button:


DNS Server Configuration
Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Select DNS Server Interface from available WAN interfaces:
Selected DNS Server Interfaces
Available WAN Interfaces
->
<-
Use the following Static DNS IP address:
Primary DNS server:
Secondary DNS server:
Back
Next

This page allows you to configure the DNS server's IP address for the WAN port. Enter the DNS server IP address provided by your ISP and click the "Next" button:


WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
Connection Type: IPoA
NAT: Enabled
Full Cone NAT: Enabled
Firewall: Enabled
IGMP Multicast: Disabled
Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.
Back
Apply/Save

This page displays the configuration information. After confirmation, please click "Apply/Save" to save it.


Wide Area Network (WAN) Service Setup
Choose Add, Remove or Edit to configure a WAN service over a selected interface.
Interface Description Type Vlan8021p VlanMuxId Igmp NAT Firewall Remove Edit
ipoa0 ipoa_0_0_35 IPoA N/A N/A Disabled Enabled Enabled
Edit
Remove

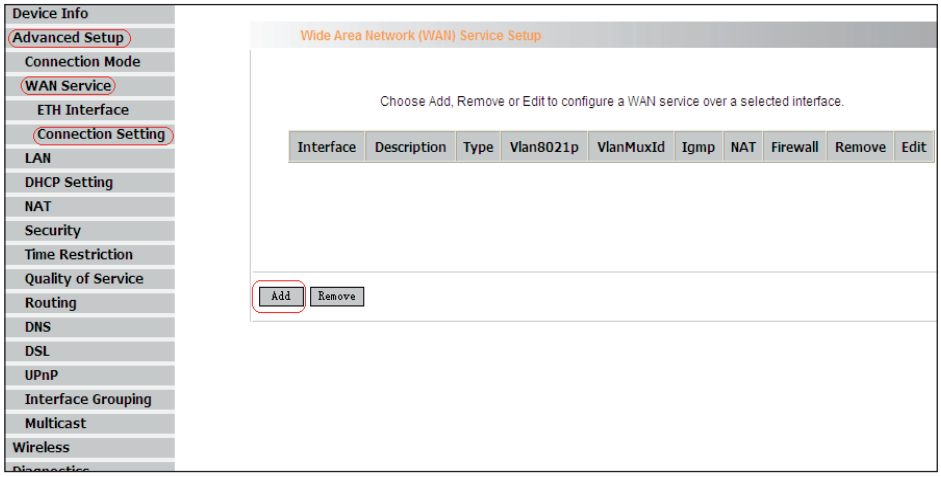
You can access Internet once the configured connection succeeds.

2. WAN Configuration in Ethernet Mode

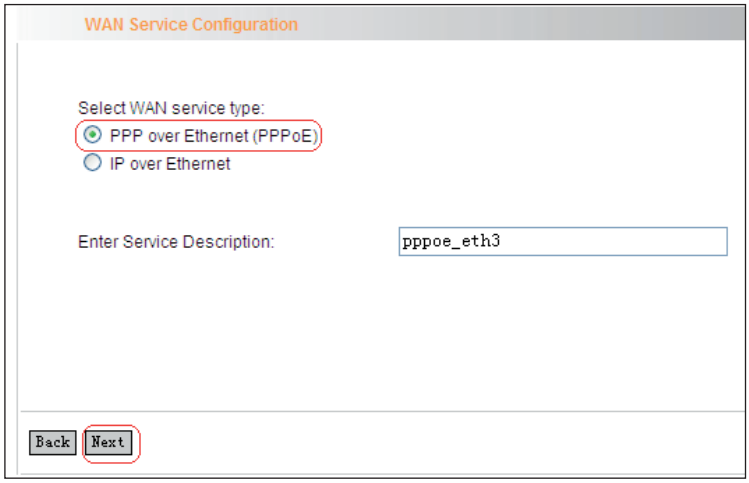
In Ethernet mode, system supports PPP over Ethernet (PPPoE) and IP over Ethernet (IPoE).

PPP over Ethernet (PPPoE)

Click "Advanced Setup"—"WAN Service" –"Connection Setting" to enter WAN service setup interface (page 1) and then click the "Add" button to go to page 2 and select a proper WAN service type.

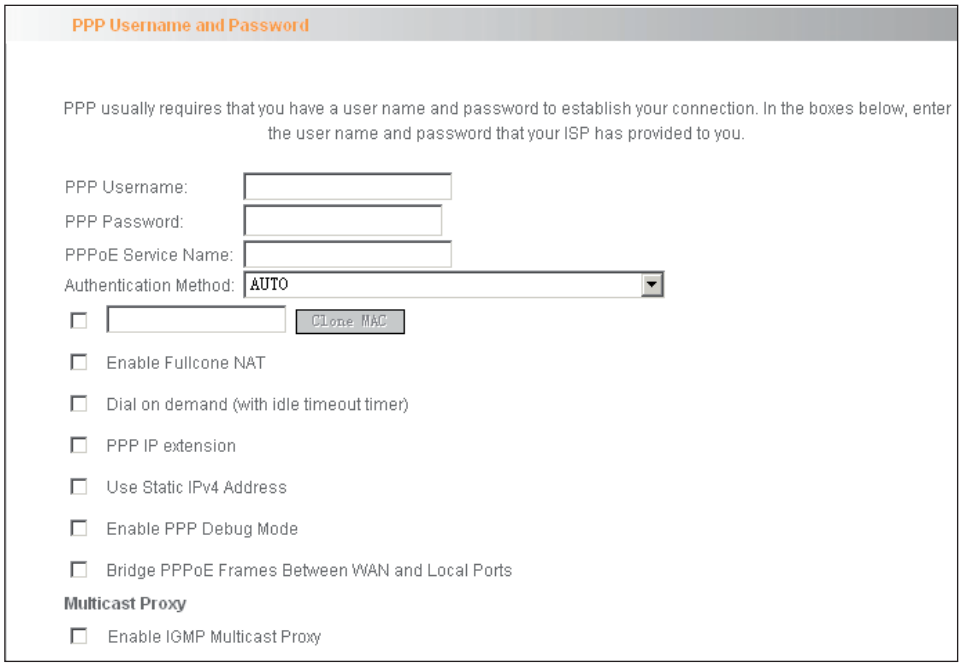


Page 1



Page 2

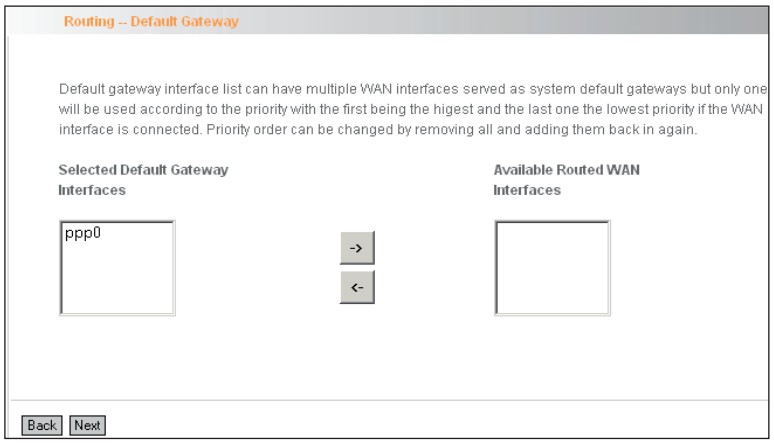
Select PPP over Ethernet (PPPoE) on page 2, modify the service description if necessary and then click "Next" to enter page 3:


PPP Username and Password
PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.
PPP Username:
PPP Password:
PPPoE Service Name:
Authentication Method:
AUTO
Clone MAC
Enable Fullcone NAT
Dial on demand (with idle timeout timer)
PPP IP extension
Use Static IPv4 Address
Enable PPP Debug Mode
Bridge PPPoE Frames Between WAN and Local Ports
Multicast Proxy
Enable IGMP Multicast Proxy

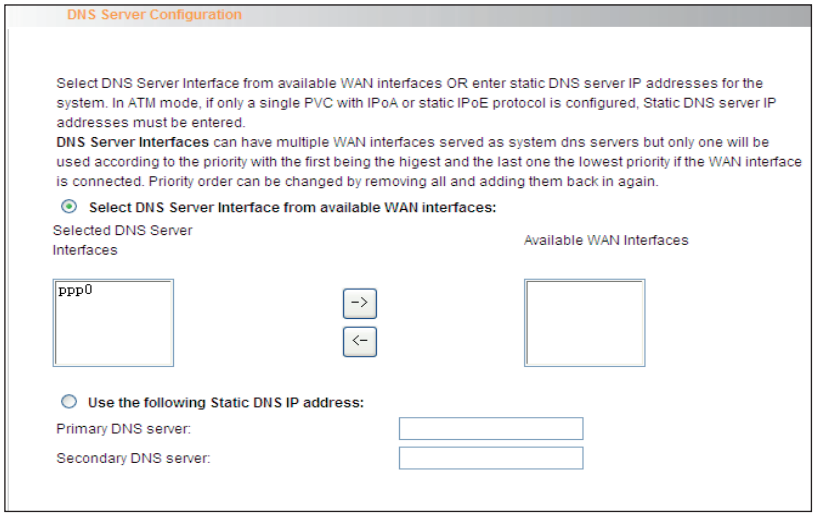
Page 3

- **PPP User Name:** User name for PPPoE dialup. It is provided by your ISP.
- **PPP Password:** The password provided by your ISP for PPPoE dialup.
- **PPPoE Service Name:** It is provided by your ISP. Do not fill it in if you don't have it; otherwise PPPoE dialup may fail
- **Authentication Method:** It is used by ISP to verify its clients during PPPoE dialup. Select "Auto" if you are not sure about it.
- **Clone MAC:** This feature clones the MAC address of the PC that is currently entering the router's management page to work as the WAN MAC address of the router. Configure it when your ISP requires a fixed MAC for your Internet access.
- **Dial on Demand:** Automatically connects or disconnects Internet according to the use of the network. It is recommended when your ISP limits network use time. This feature can help you to save the Internet fee.PPP IP extension: The IP addresses of all packets including management packets that egress WAN port will be converted to the WAN port's IP address once this feature is enabled.
- **Enable PPP Debug Mode:** This feature can be enabled only when supported by your ISP.
- Bridge PPPoE Frames Between WAN and Local Ports: PPPoE dialup frame initiated by LAN port will directly egress WAN port without being modified if this feature is enabled.
- **Multicast Proxy:** Router enables multicast proxy server if this feature is enabled.

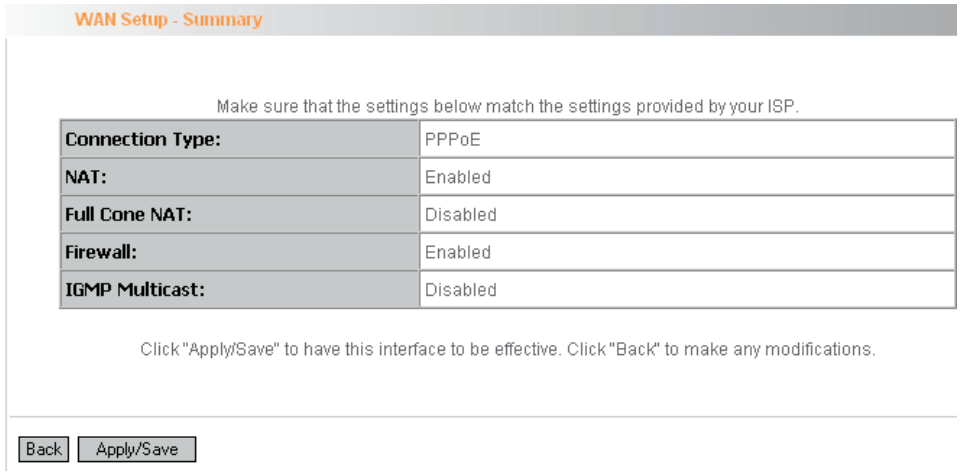
Enter the PPP user name and PPP Password provided by your ISP. For other options, keep the default values if you are not clear about them, and then click the “Next” button to display the following screen:


Routing -- Default Gateway
Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Selected Default Gateway Interfaces
Available Routed WAN Interfaces
ppp0
->
<-
Back
Next

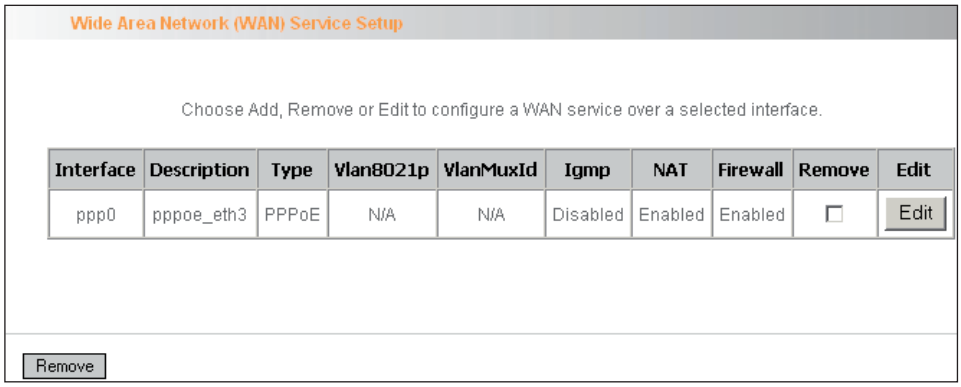
This page allows you to configure the gateway address for the WAN connection. We recommend you to keep the default values and click the “Next” button to enter the following page:


DNS Server Configuration
Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Select DNS Server Interface from available WAN interfaces:
Selected DNS Server Interfaces
Available WAN Interfaces
ppp0
->
<-
Use the following Static DNS IP address:
Primary DNS server:
Secondary DNS server:

This page allows you to configure the DNS server’s IP address for the WAN port. We recommend you to keep the default values if you are not clear about it and click the “Next” button to enter the following page:


WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
Connection Type: PPPoE
NAT: Enabled
Full Cone NAT: Disabled
Firewall: Enabled
IGMP Multicast: Disabled
Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.
Back
Apply/Save

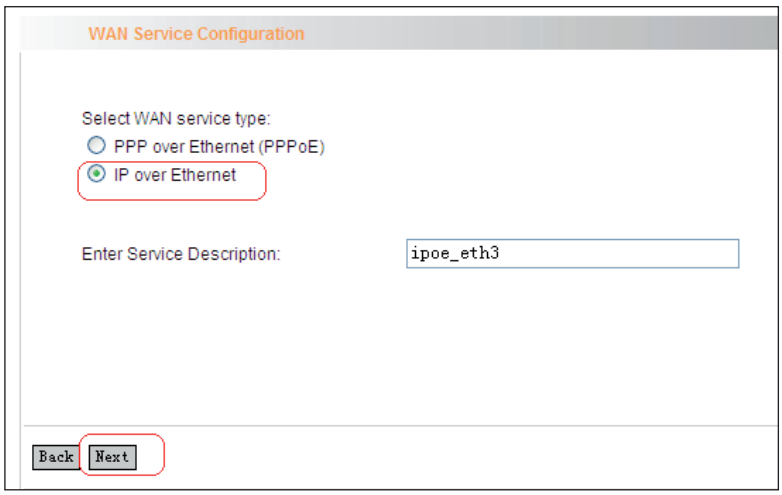
This page displays the configuration information. After confirmation, please click “Apply/Save” to save it.



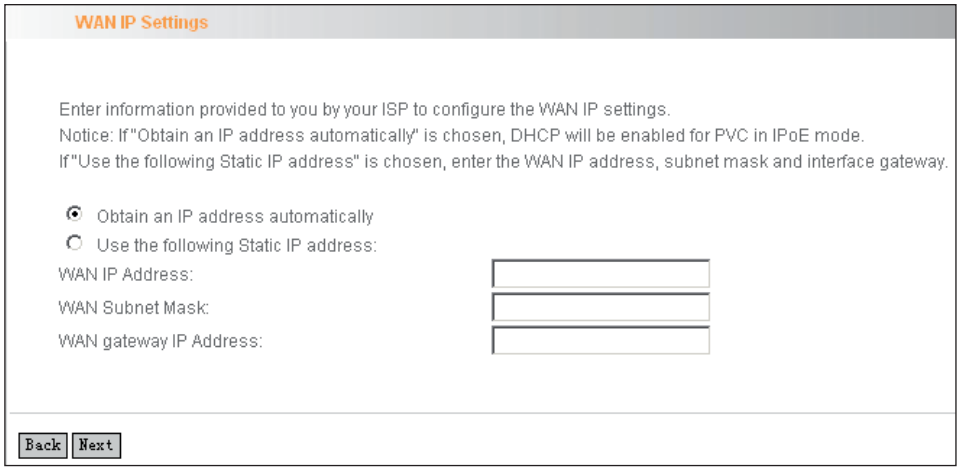
You can access Internet once PPPoE dialup succeeds.

IP over Ethernet

When your ISP provides you an IP address or tells you that you only need to configure your PC to obtain an IP address automatically to access Internet, you need to select IP over Ethernet (IPoE) as the WAN service type.



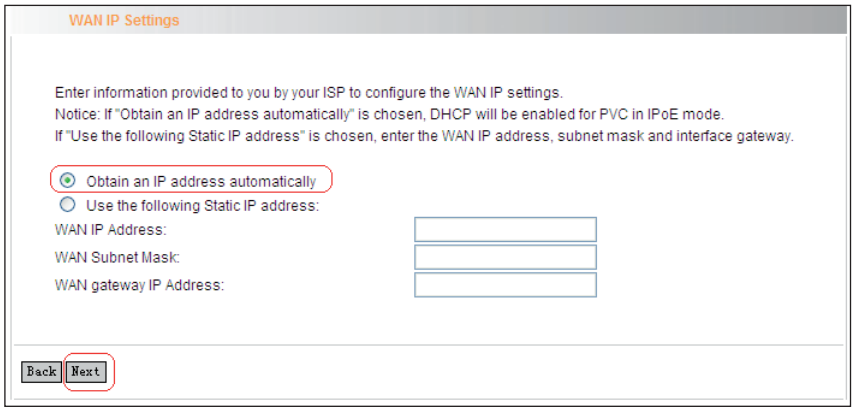
Modify the service description if necessary and then click the “Next” button:

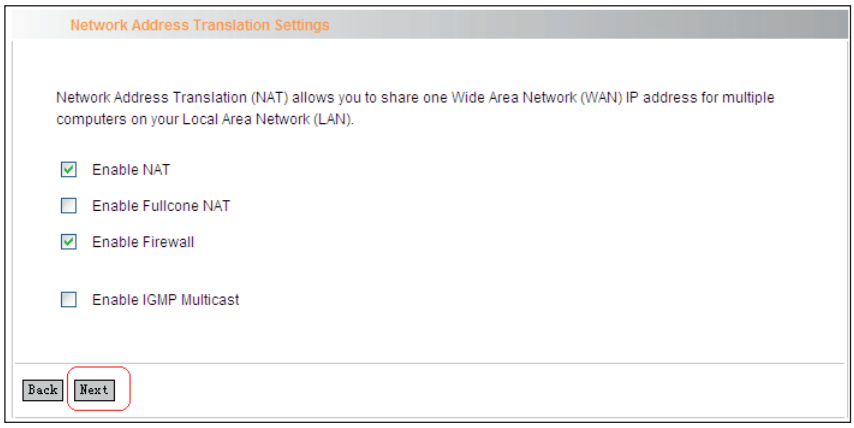

WAN IP Settings
Enter information provided to you by your ISP to configure the WAN IP settings.
Notice: If "Obtain an IP address automatically" is chosen, DHCP will be enabled for PVC in IPoE mode.
If "Use the following Static IP address" is chosen, enter the WAN IP address, subnet mask and interface gateway.
Obtain an IP address automatically
Use the following Static IP address:
WAN IP Address:
WAN Subnet Mask:
WAN gateway IP Address:
Back
Next

- **Obtain an IP address automatically:** WAN port will automatically obtain an IP address for accessing Internet from the ISP, if this feature is selected.

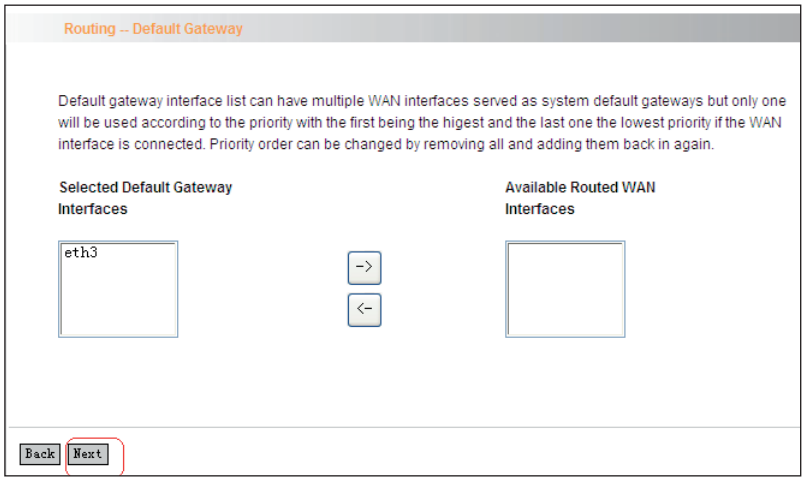
- **Use the following Static IP address:** select this feature if your ISP provides you an IP address.
- **WAN IP Address:** the IP address provided by your ISP for accessing Internet.
- **WAN Subnet Mask:** the subnet mask address provided by your ISP for accessing Internet.
- **WAN gateway IP Address:** the gateway IP address provided by your ISP for accessing Internet.

Enter the IP/ subnet mask/gateway IP address provided by your ISP or select “Obtain an IP address automatically” and click the “Next” button:

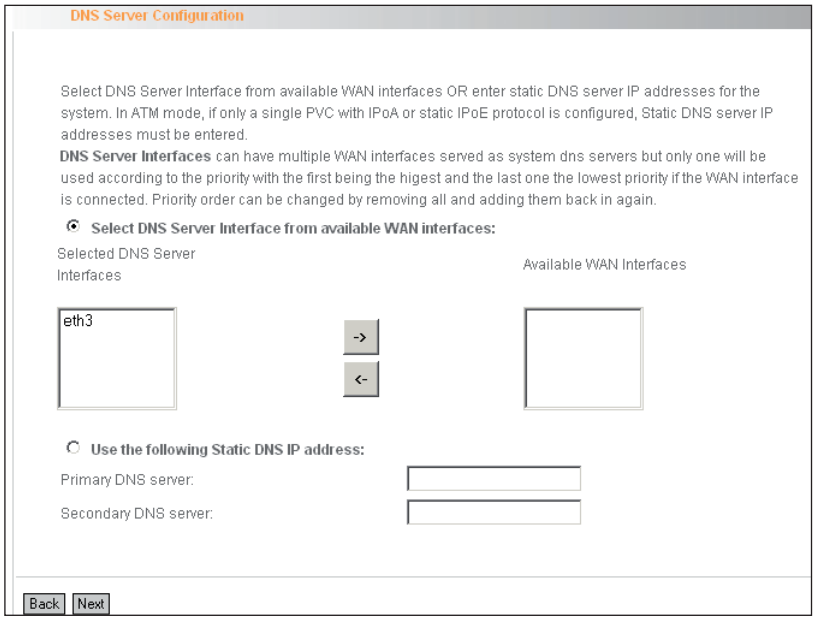

WAN IP Settings
Enter information provided to you by your ISP to configure the WAN IP settings.
Notice: If "Obtain an IP address automatically" is chosen, DHCP will be enabled for PVC in IPoE mode.
If "Use the following Static IP address" is chosen, enter the WAN IP address, subnet mask and interface gateway.
Obtain an IP address automatically
Use the following Static IP address:
WAN IP Address:
WAN Subnet Mask:
WAN gateway IP Address:
Back
Next


Network Address Translation Settings
Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).
Enable NAT
Enable Fullcone NAT
Enable Firewall
Enable IGMP Multicast
Back
Next

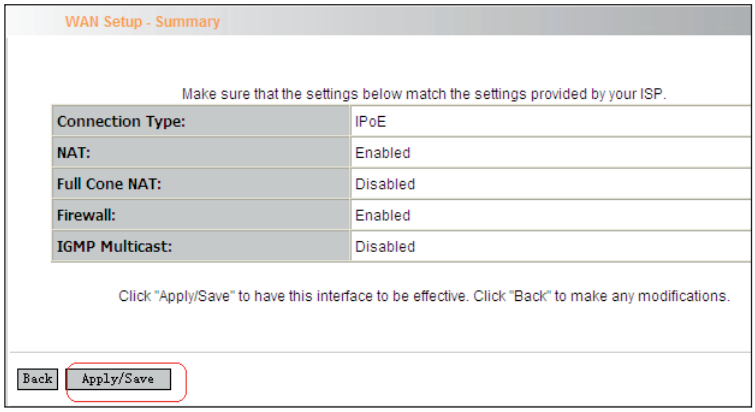
We recommend you to keep the default settings unchanged and click the “Next” button:


Routing -- Default Gateway
Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Selected Default Gateway Interfaces
Available Routed WAN Interfaces
eth3
->
<-
Back
Next

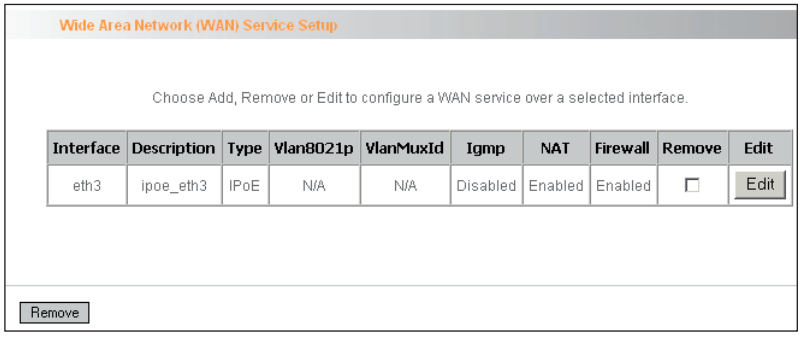
This page allows you to configure the gateway address for WAN connection. We recommend you to keep the default values and click the “Next” button:


DNS Server Configuration
Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
Select DNS Server Interface from available WAN interfaces:
Selected DNS Server Interfaces
Available WAN Interfaces
eth3
->
<-
Use the following Static DNS IP address:
Primary DNS server:
Secondary DNS server:
Back
Next

This page allows you to configure the DNS server's IP address for the WAN port. We recommend you to keep the default values if you are not clear about it and click the "Next" button:


WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
Connection Type: IPoE
NAT: Enabled
Full Cone NAT: Disabled
Firewall: Enabled
IGMP Multicast: Disabled
Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications.
Back
Apply/Save

This page displays the configuration information. After confirmation, please click "Apply/Save" to save it.

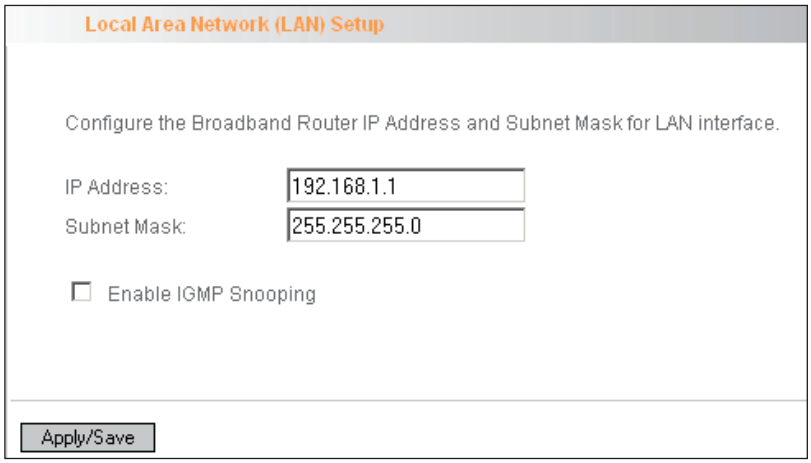

Wide Area Network (WAN) Service Setup
Choose Add, Remove or Edit to configure a WAN service over a selected interface.
Interface Description Type Vlan8021p VlanMuxId Igmp NAT Firewall Remove Edit
eth3 ipoe_eth3 IPoE N/A N/A Disabled Enabled Enabled
Edit
Remove

You can access Internet once the configured connection succeeds.

4.2.3 LAN

You can change the IP address of the LAN port to match the requirement of the practical network environment.

To enter the screen below, click “Advanced Setup”--“LAN”.



- **IP Address:** It is the Router’s LAN IP address. The default IP address is 192.168.1.1.
- **Subnet Mask:** It is the Router’s LAN subnet mask. You can modify it according to your needs.
- **Enable IGMP Snooping**: Check/uncheck to enable/disable the IGMP Snooping.

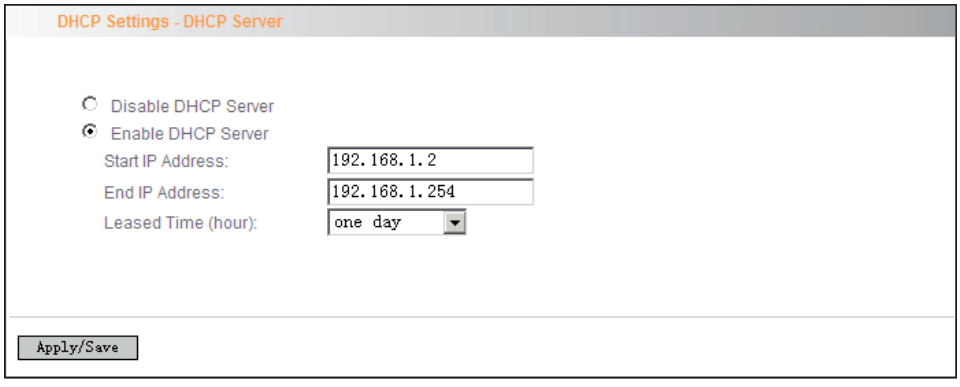
⚠ ***Note:***

If you have changed the LAN IP address, then you must re-configure your PC’s IP address to log on to the router’s Web-based management interface, and the default gateway of all computers that connect to the router’s LAN ports have to be set to the new IP address for normal Internet access.

4.2.4 DHCP setting

DHCP Server

This router enables DHCP server function by default. DHCP refers to Dynamic Host Control Protocol. With an internal DHCP server, the Router can automatically configure the IP addresses, subnet mask, gateway and DNS server, etc for the computers that connect to the router’s LAN ports and are configured to obtain an IP address automatically. Therefore, it reduces the inconvenience and trouble in manually configuring IP address and other network parameters for multiple computers in LAN.



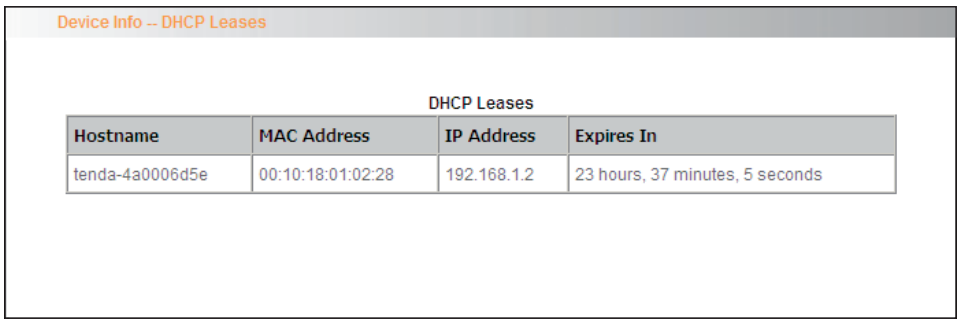
- **Enable/ Disable DHCP Server:** Click the corresponding button to enable/ disable the DHCP Server.
- **Start IP:** The point from which DHCP server starts IP address distribution.
- **End IP:** The point where DHCP server ends IP address distribution.
- **Lease Time:** It indicates the valid time of the dynamic IP address, which is distributed to the client's host computer by DHCP server. During this time, the server will not distribute the IP address to any other host computer.

⚠ ***Note:***

To use the Router's DHCP server function, you must set the TCP/IP protocol of the computers in LAN to "Obtain an IP address automatically".

DHCP client

This page displays DHCP client's information such as host name, MAC address, IP address, and lease time.

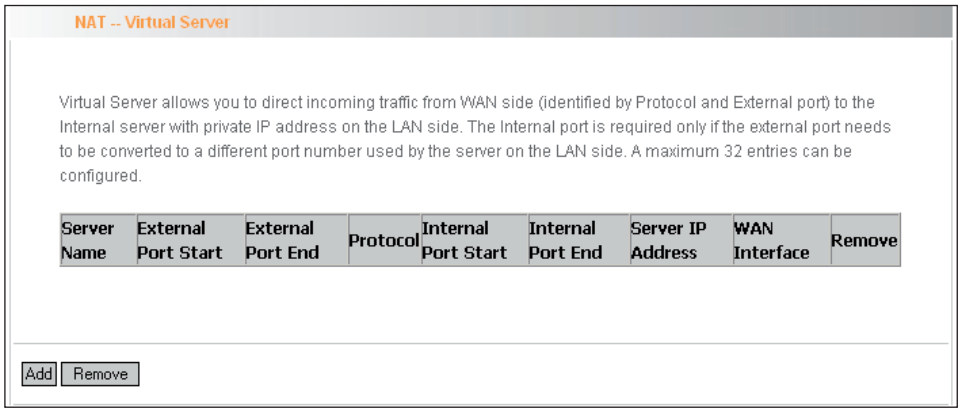


- **Hostname:** The name of a PC or a network device that has successfully obtained an IP address from the DHCP server.
- **MAC Address:** The MAC address of a PC or a network device that has successfully obtained an IP address from the DHCP server.
- **IP Address:** The IP address distributed by DHCP server.
- **Expires In:** This item displays the leftover lease time.

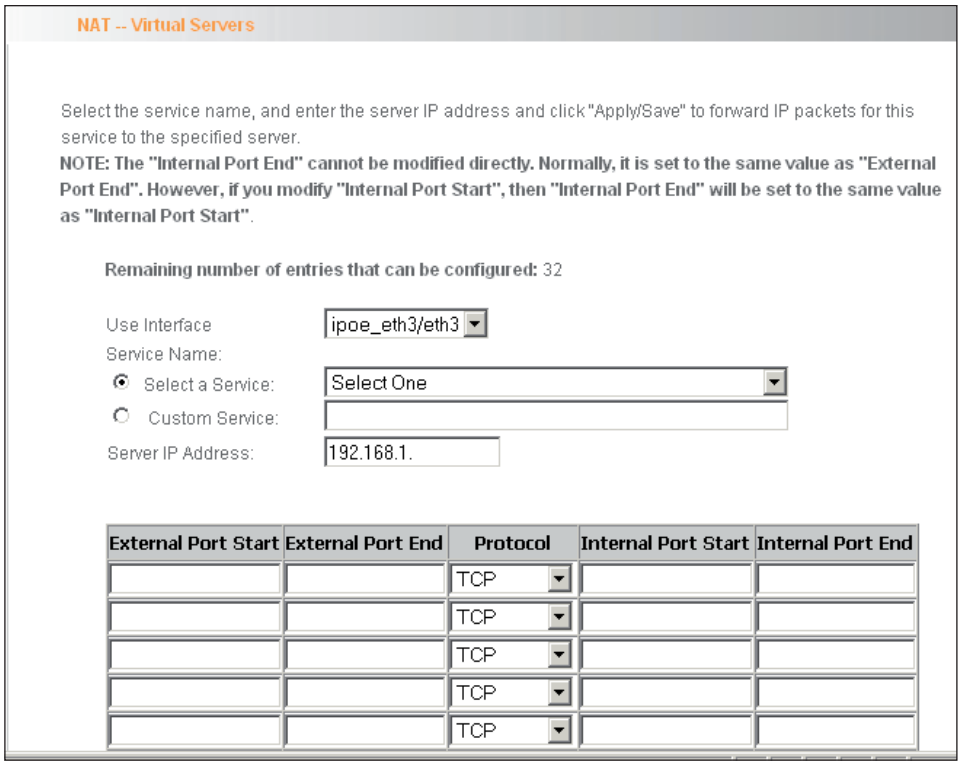
4.2.5 NAT

Virtual Server

When you create a server such as a Web server, FTP server or game server in your router's LAN side, you can let Internet users access the created server through the router's WAN IP address by configuring virtual server.


NAT -- Virtual Server
Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.
Server Name
External Port Start
External Port End
Protocol
Internal Port Start
Internal Port End
Server IP Address
WAN Interface
Remove
Add
Remove

To enter virtual server interface, click "NAT"-> "Virtual Server". And then click the "Add" button to add rules for accessing the server.


NAT -- Virtual Servers
Select the service name, and enter the server IP address and click "Apply/Save" to forward IP packets for this service to the specified server.
NOTE: The "Internal Port End" cannot be modified directly. Normally, it is set to the same value as "External Port End". However, if you modify "Internal Port Start", then "Internal Port End" will be set to the same value as "Internal Port Start".
Remaining number of entries that can be configured: 32
Use Interface
ipoe_eth3/eth3
Service Name:
Select a Service:
Select One
Custom Service:
Server IP Address:
192.168.1.
External Port Start
External Port End
Protocol
Internal Port Start
Internal Port End
TCP
TCP
TCP
TCP
TCP

- **Use Interface:** It indicates which WAN connection the configured rules are to be applied to. When there is only one configured WAN connection available, system will select it automatically.
- **Service Name:** There are two options available: (1) Select a Service: allows you to select an existing service from the drop-down list box. (2) Custom Service: allows you to define a service yourself.

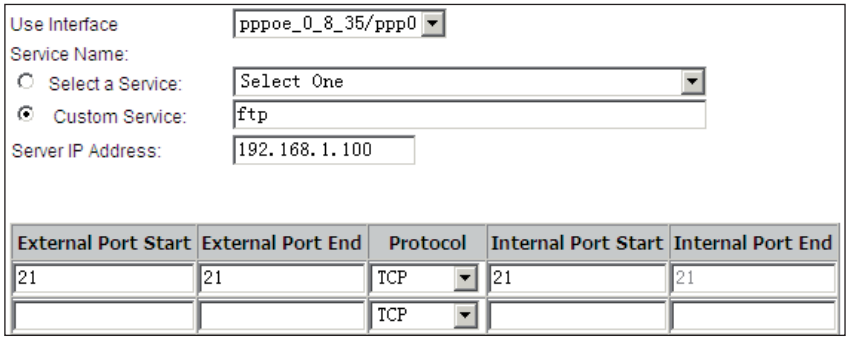
- **Server IP Address:** The IP address of the server created on LAN side.
- **External Port Start/ External Port End:** The port range through which Internet users access the router's LAN side server.
- **Protocol: There are 3 options:** TCP, UDP and TCP/UDP. We recommend you to select TCP/UDP if you are not sure about which protocol to choose.
- **Internal Port Start/ Internal Port End:** The port range used by the created server on router's LAN side.

Note: When UPNP function is enabled on the router and on some application programs on the computer that is connected to the router's LAN port, the virtual server page will display: UPNP interface is being used.

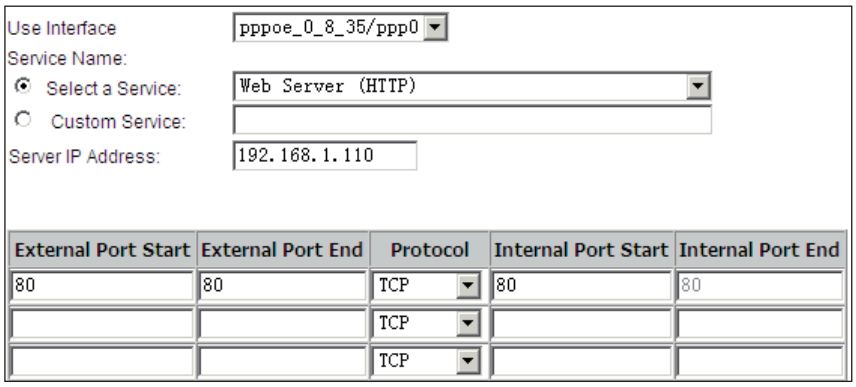
For example, you have created two servers on the router's LAN side: (1) FTP server (Port: 21) for transferring files is at the IP address of 192.168.1.100 (2) Web server (port: 80) is at the IP address of 192.168.1.110. And you want your Internet friends to access your FTP and Web servers respectively via port: 21 and port: 80. For configurations, follow the instructions below:

1. Configuring FTP server:

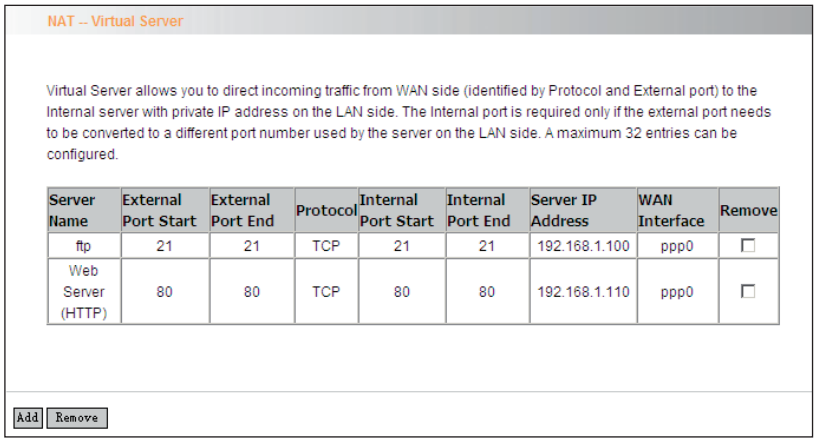
Click "NAT"-> "Virtual Server" to enter the virtual server interface. Then click the "Add" button to configure the following page (refer to the parameters that are configured on the page):



2. Configuring Web server



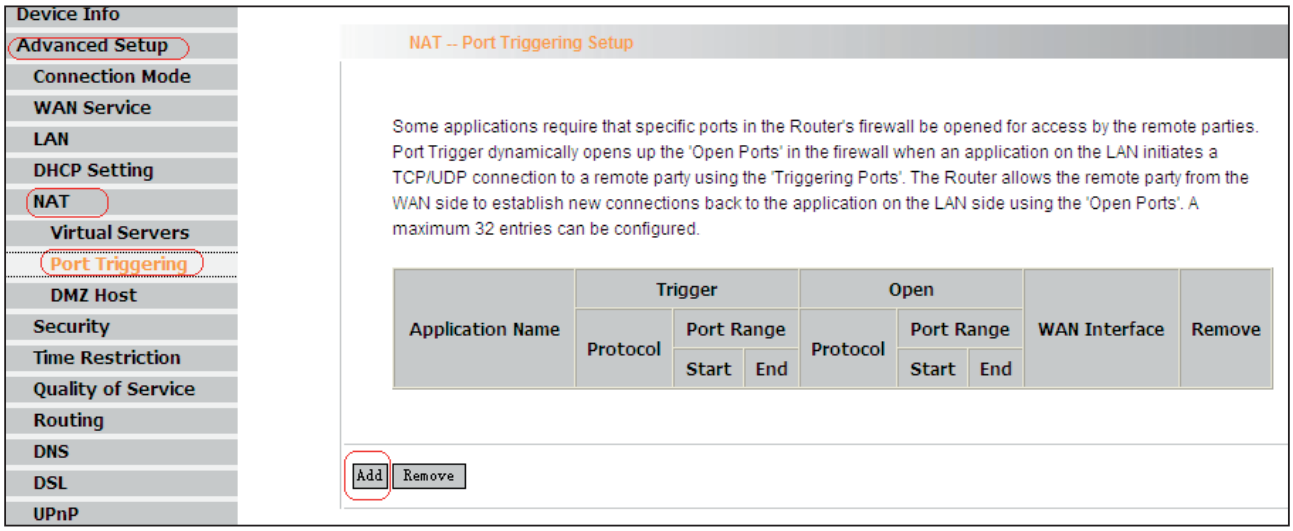
The screen appears as below after the above configuration is finished:



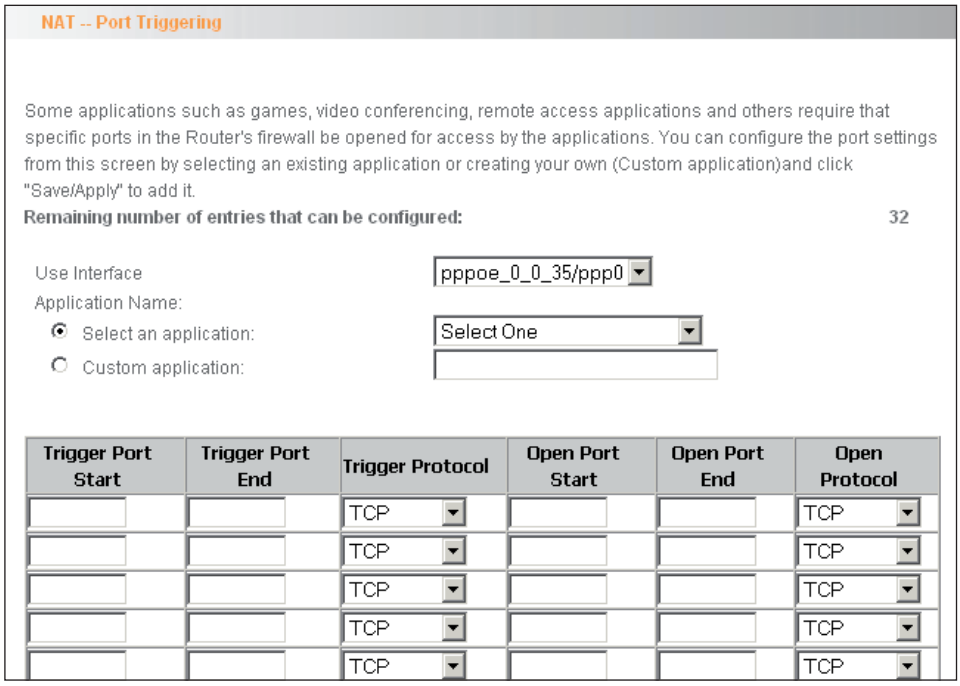
Supposing that the IP address of PPP0 is 183.37.227.201, then the Internet user only needs to enter ftp://183.37.227.201 or http://183.37.227.201 in Web browser address field to access your FTP or Web server respectively.

4.2.6 Port Triggering

Some application programs or network business (such as network game, video conference, etc) can not work with simple NAT router due to the isolation caused by router's built-in firewall. Therefore, proper configuration is needed. When application program initiates a connection toward the triggering port, all correspondingly open ports will be enabled to implement successful connection and service.



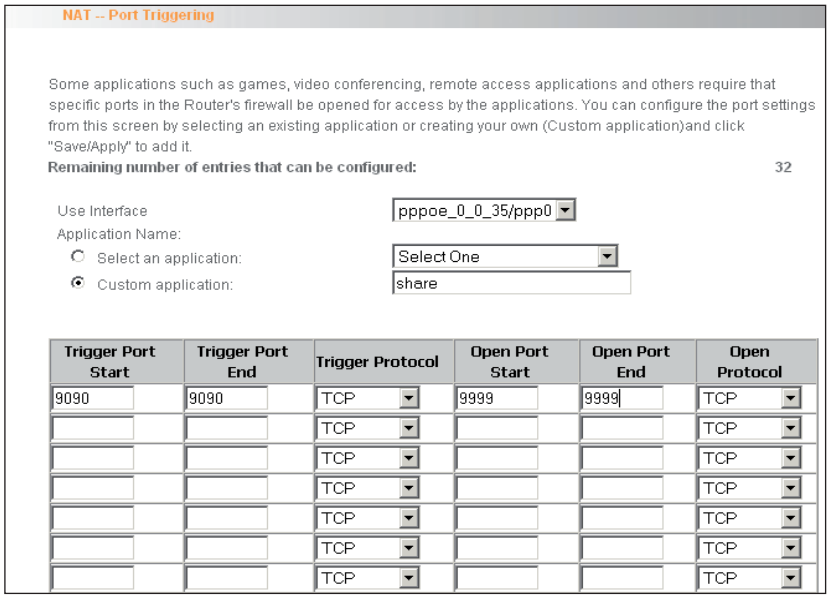
Click "Advanced Setup"→"NAT"→"Port Triggering" to enter the port triggering interface and then click the "Add" button to add rules.


NAT -- Port Triggering
Some applications such as games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application)and click "Save/Apply" to add it.
Remaining number of entries that can be configured: 32
Use Interface
pppoe_0_0_35/ppp0
Application Name:
Select an application:
Select One
Custom application:
Trigger Port Start
Trigger Port End
Trigger Protocol
Open Port Start
Open Port End
Open Protocol
TCP

- **Use Interface:** It indicates which WAN connection the configured rules are to be applied to. When there is only one configured WAN connection available, system will select it automatically.
- **Application Name:** There are two options available:
  (1) Select an application: allows you to select an existing application from the drop-down list box.
  (2) Custom application: allows you to define an application yourself.
- **Trigger Port Start/ Trigger Port End:** The port range for application programs to initiate connections.
- **Trigger Protocol:** There are 3 options: TCP, UDP and TCP/UDP. We recommend you to select TCP/UDP if you are not sure about which protocol to choose.
- **Open Port Start/ Open Port End:** the port range that will be automatically enabled by the built-in firewall when connections initiated by application programs succeed.

For example, you have created a server on router's LAN side that can automatically download material from Internet (via port: 9090) and share its data with other users. And you want Internet users to download data from your server (via port: 9999). For configurations, follow the instructions below:

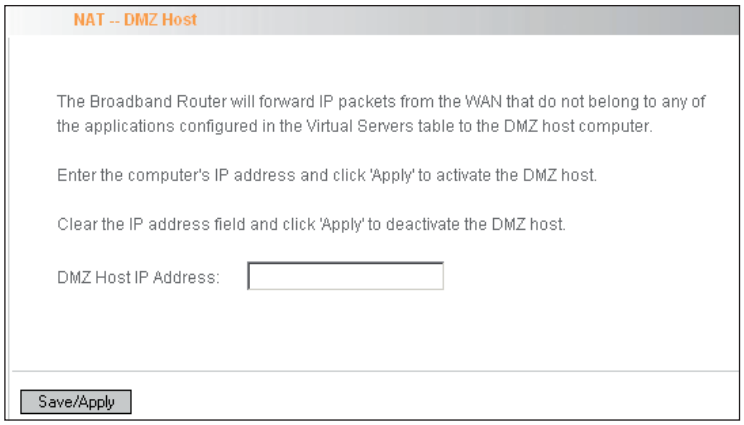
To enter the port-triggering interface, click "Advanced Setup"→ "NAT"→"Port Triggering", and then click the "Add" button to configure the page below (Refer to the parameters configured on the page below):


NAT -- Port Triggering
Some applications such as games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application)and click "Save/Apply" to add it.
Remaining number of entries that can be configured: 32
Use Interface
pppoe_0_0_35/ppp0
Application Name:
Select an application:
Select One
Custom application:
share
Trigger Port Start
Trigger Port End
Trigger Protocol
Open Port Start
Open Port End
Open Protocol
9090
9090
TCP
9999
9999
TCP

When your server initiates a connection toward the server on Internet via port: 9090, the router's firewall will automatically open port: 9999 to let Internet users access your server to download data via this port: 9999.

4.2.7 DMZ Host

Once a PC on a LAN is set as a DMZ host, it can implement network communication with Internet without limit.

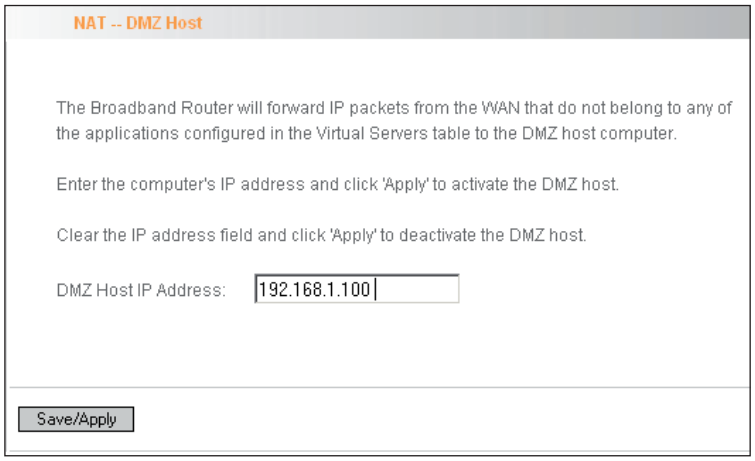

NAT -- DMZ Host
The Broadband Router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.
Enter the computer's IP address and click 'Apply' to activate the DMZ host.
Clear the IP address field and click 'Apply' to deactivate the DMZ host.
DMZ Host IP Address:
Save/Apply

- DMZ Host IP Address: the IP address of a PC to be set as a DMZ host. DMZ host must be connected to the router's LAN port.

Note: The router's firewall cannot have effect on the DMZ host once it is enabled. Therefore, network security problem may occur. Thus, we recommend you to enable this function only when necessary and delete the corresponding settings as soon as you are not using it.

For example, if you want the PC at the IP address of 192.168.1.100 from your router's LAN side to be shared by Internet users for data and other resources. For configurations, follow the instructions below:

Click “Advanced Setup”----“NAT”---“DMZ Host” to configure the page below:

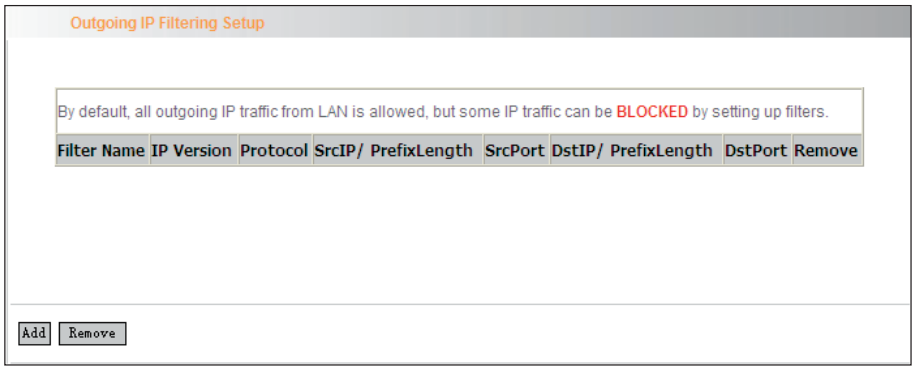

NAT -- DMZ Host
The Broadband Router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.
Enter the computer's IP address and click 'Apply' to activate the DMZ host.
Clear the IP address field and click 'Apply' to deactivate the DMZ host.
DMZ Host IP Address:
192.168.1.100
Save/Apply

Supposing that the router’s WAN IP address is 183.37.227.201, then the Internet user only needs to enter http://183.37.227.201 in Web browser address field to access your Web server.

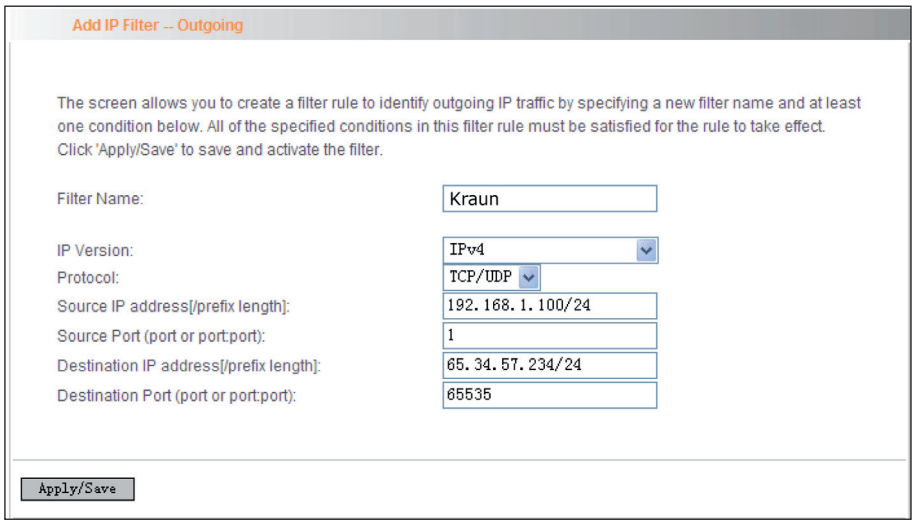
4.2.8 Security

IP Filter

IP filter function can block LAN PCs from communicating with Internet PCs by preventing specific IP addresses from accessing external network through router via specific a port number or range.



1. Click “Advanced Setup” → “Security” → “IP Filtering” to display the page above and then click the “Add” button to enter the page below to add filtering rules.


Add IP Filter -- Outgoing
The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect.
Click 'Apply/Save' to save and activate the filter.
Filter Name:
Kraun
IP Version:
IPv4
Protocol:
TCP/UDP
Source IP address[/prefix length]:
192.168.1.100/24
Source Port (port or port:port):
1
Destination IP address[/prefix length]:
65.34.57.234/24
Destination Port (port or port:port):
65535
Apply/Save

Filter Name: Enter the defined filtering name.

IP Version: Only Ipv4 is provided.

Protocol: TCP/UDP; TCP; UDP; ICMP available for your option.

Source IP address [/prefix length]: Enter the LAN IP address to be filtered.

Source Port (port or port: port): The port number or range used by LAN PCs in accessing Internet.

Destination IP address [/prefix length]: The external network IP address to be accessed by LAN PC.

Destination Port: The port number or range used by LAN PCs in accessing external network.

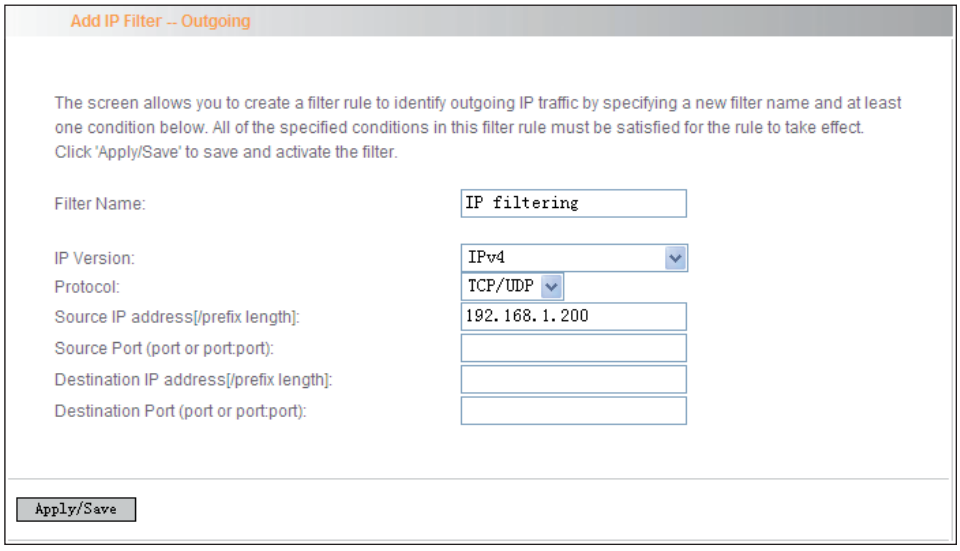
Note:

- Packets filtered in this function are transferred from LAN to WAN.
- If you are not familiar with all parameters to be configured, you can just configure some of them and keep the left unchanged. And the filtering function can also be implemented.

For example:

If you want to filter the PC at the IP address of 192.168.1.200 and make it unable to access Internet. Then follow the instructions below:

First, click "Advanced Setup" → "Security" → "IP Filtering" to enter the IP filtering setup page and then click the "Add" button to enter the page below to configure needed parameters as below:


Add IP Filter -- Outgoing
The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Apply/Save' to save and activate the filter.
Filter Name:
IP filtering
IP Version:
IPv4
Protocol:
TCP/UDP
Source IP address[/prefix length]:
192.168.1.200
Source Port (port or port:port):
Destination IP address[/prefix length]:
Destination Port (port or port:port):
Apply/Save

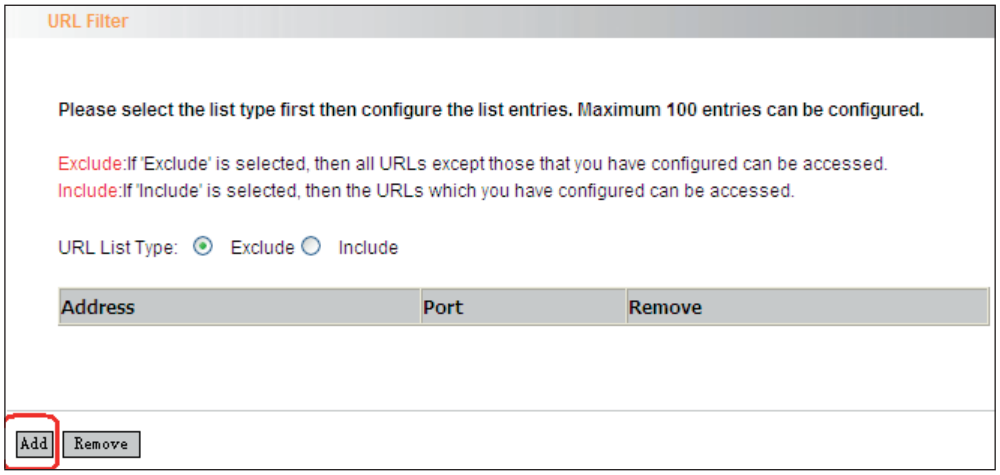
Then click the "Apply/Save" button to save your setting.

Note:

- Principle of using "IP Filter" funciton to prohibit BT download: when you use BT software to download data, it needs to send request for connectting "seed" server, and when this request passes the router, the router's IP Filter function will hold it up and ignore the request so that BT fails to connect the server and download will be aborted.
- The ports that BT "seed" server frequently uses are in the range of 6900-8100 such as 6969 8000 and 7373. Therefore, we can block this port range by creating proper rules to stop BT software from connecting the server. However, some Non-BT "seed" servers are also using port 8080, thus, in order not to affect other servers, we must divide the port range of 6900-8100 to be blocked into 2 groups: 6900-8079 and 8081-8100.
- The protocols that BT uses are TCP/UDP, so we need to block both of them.

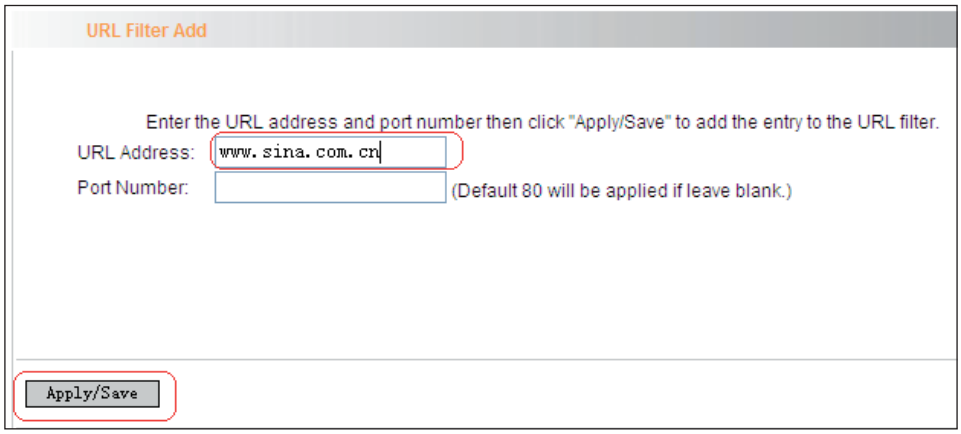
URL Filter

URL filter function blocks all LAN PCs from accessing specific domain names on Internet. It rejects all requests to access the specific domains.


URL Filter
Please select the list type first then configure the list entries. Maximum 100 entries can be configured.
Exclude:If 'Exclude' is selected, then all URLs except those that you have configured can be accessed.
Include:If 'Include' is selected, then the URLs which you have configured can be accessed.
URL List Type: Exclude Include
Address
Port
Remove
Add
Remove

For example, if you want to prevent all LAN PCs from accessing www.sina.com.cn, then follow the instructions below:

Click "Advanced Setup"→"Security"→"URL Filter" to the page above and then click the "Add" there to enter the page below to configure needed parameters:


URL Filter Add
Enter the URL address and port number then click "Apply/Save" to add the entry to the URL filter.
URL Address: www.sina.com.cn
Port Number:
(Default 80 will be applied if leave blank.)
Apply/Save

URL Address: Enter the domain name that rejects LAN PCs access.

Port Number: It indicates the port used by Web server, 80 by default.

Then click the "Apply/Save" button to save your settings. As a result, all LAN PCs can not access www.sina.com.cn.

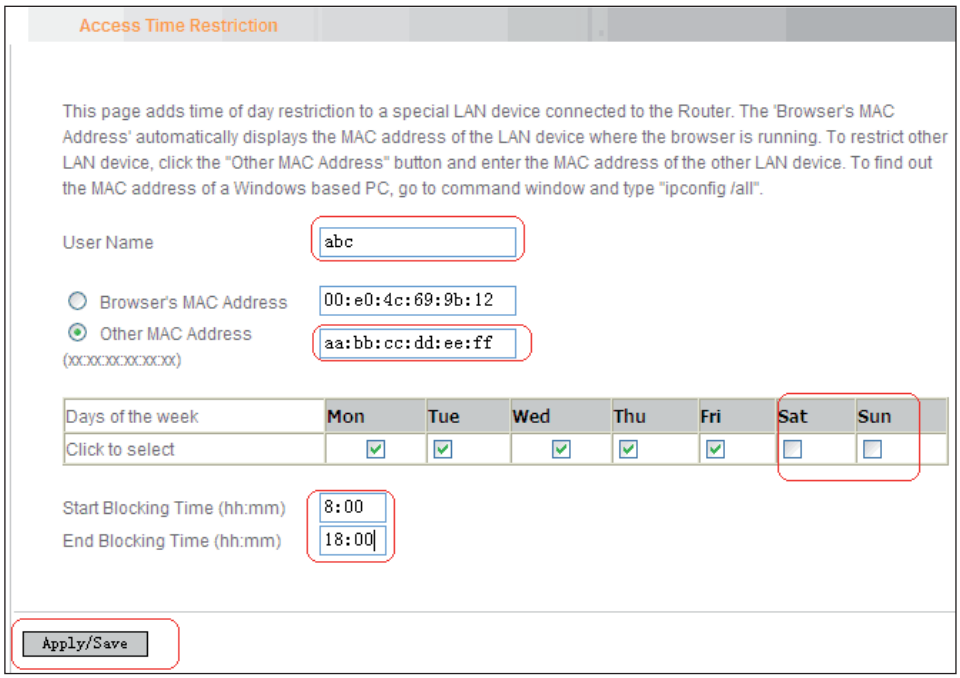
Note: After you have added the URL filter rule, if you previously accessed this URL, then you need to reboot the router and delete your PC's cache to activate the function. However, you can access the deleted URL without rebooting the router after you delete a filter rule.

4.2.9 Time Restriction

This function can restrict PCs or other network devices that are connected to the router's LAN ports to a specific Internet access time.

For example: If you want the PC at the MAC address of aa:bb:cc:dd:ee:ff to access Internet on Saturday and Sunday only, then follow the instructions below:

Click "Advanced Setup"→"Security" → "Time Restriction" to enter the screen above and then click the "Add" button there to enter the screen below to configure needed parameters:


Access Time Restriction
This page adds time of day restriction to a special LAN device connected to the Router. The 'Browser's MAC Address' automatically displays the MAC address of the LAN device where the browser is running. To restrict other LAN device, click the "Other MAC Address" button and enter the MAC address of the other LAN device. To find out the MAC address of a Windows based PC, go to command window and type "ipconfig /all".
User Name
abc
Browser's MAC Address
00:e0:4c:69:9b:12
Other MAC Address
(xx:xx:xx:xx:xx:xx)
aa:bb:cc:dd:ee:ff
Days of the week
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Click to select
Start Blocking Time (hh:mm)
8:00
End Blocking Time (hh:mm)
18:00
Apply/Save

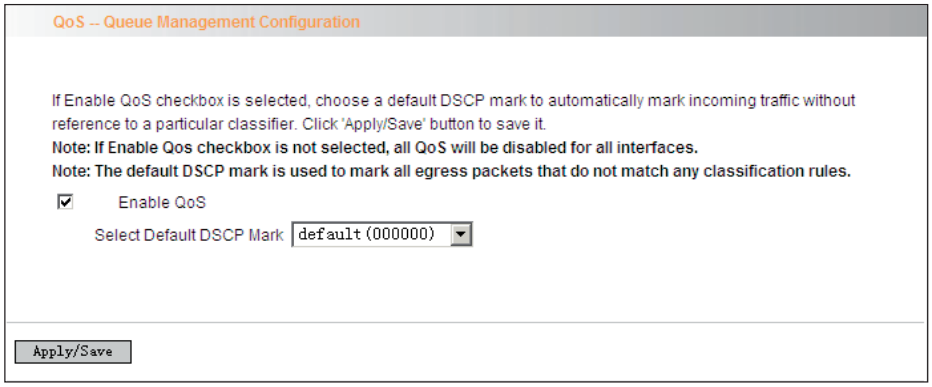
- **User Name:** Enter the defined user name by you.
- **Browser's MAC Address:** The MAC address of the PC that is currently accessing the router's management interface; it is automatically added by system.
- **Other MAC Address:** The MAC address whose Internet access time you want to restrict. Enter it manually.
- **Start Blocking Time (hh:mm) / End Blocking Time (hh:mm):** The time range during which Internet access is blocked.

After configuration is finished, click the "Apply/Save" button and the MAC address of aa:bb:cc:dd:ee:ff can only access Internet on Saturday and Sunday.

4.2.10 Quality of Service

Quality of service is the ability to provide different priority to different applications, users, or data flows, or to guarantee a certain level of performance to a data flow.

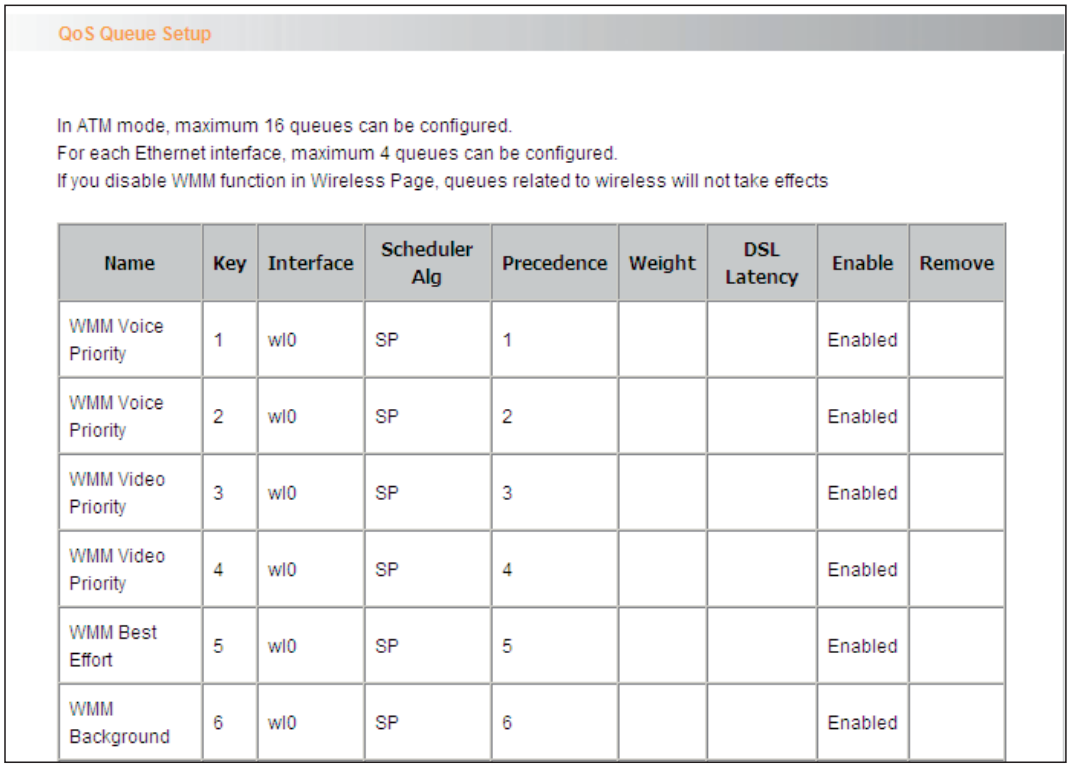
Select the "Advanced Setup"→ "Quality of Service" menu to enter the following screen.


QoS -- Queue Management Configuration
If Enable QoS checkbox is selected, choose a default DSCP mark to automatically mark incoming traffic without reference to a particular classifier. Click 'Apply/Save' button to save it.
Note: If Enable Qos checkbox is not selected, all QoS will be disabled for all interfaces.
Note: The default DSCP mark is used to mark all egress packets that do not match any classification rules.
Enable QoS
Select Default DSCP Mark default(000000)
Apply/Save

Select the "Enable QoS" Checkbox, and select Default DSCP Mark Value, then, Click 'Save/Apply' to save and activate the rule.

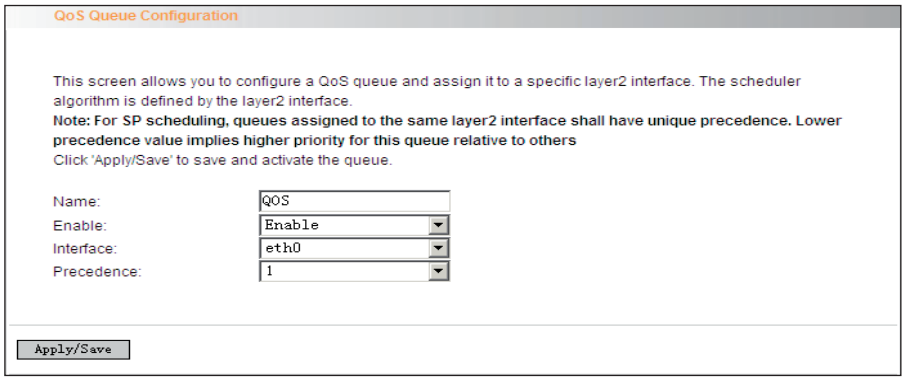
Queue Configuration

Click "Advanced Setup"-> "Quality of Service"-> "Queue config" to display the configured QoS rule .


QoS Queue Setup
In ATM mode, maximum 16 queues can be configured.
For each Ethernet interface, maximum 4 queues can be configured.
If you disable WMM function in Wireless Page, queues related to wireless will not take effects

Name	Key	Interface	Scheduler Alg	Precedence	Weight	DSL Latency	Enable	Remove
WMM Voice Priority	1	wl0	SP	1			Enabled	
WMM Voice Priority	2	wl0	SP	2			Enabled	
WMM Video Priority	3	wl0	SP	3			Enabled	
WMM Video Priority	4	wl0	SP	4			Enabled	
WMM Best Effort	5	wl0	SP	5			Enabled	
WMM Background	6	wl0	SP	6			Enabled	

Click “Add” to enter the following screen to add rules.


QoS Queue Configuration
This screen allows you to configure a QoS queue and assign it to a specific layer2 interface. The scheduler algorithm is defined by the layer2 interface.
Note: For SP scheduling, queues assigned to the same layer2 interface shall have unique precedence. Lower precedence value implies higher priority for this queue relative to others
Click 'Apply/Save' to save and activate the queue.
Name:
QOS
Enable:
Enable
Interface:
eth0
Precedence:
1
Apply/Save

Name: The name of the configured rule.

Enable: Enable/Disable the rule.

Interface: The interface that needs to configure priority. Precedence: Set a priority for the selected interface.

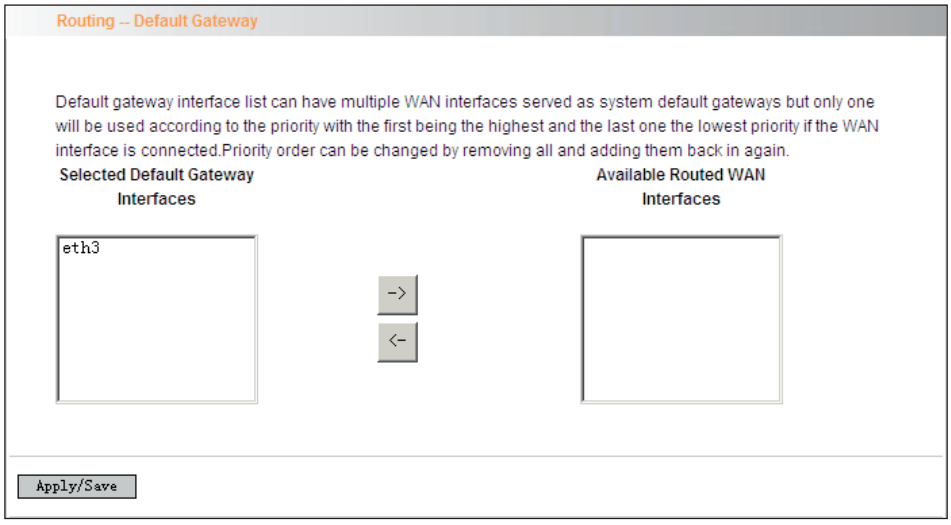
Click “Save/Apply” to save the settings.

4.2.11 Routing

Default Gateway

Gateway is the path for sending packets when your computer is communicating with computers on other networks. When there are multiple WAN connections, the gateway must be specified, otherwise, your computer may not be able to communicate with computers on other networks. When there is only one WAN connection, just keep the default settings.

Click “Advanced Setup”-> “Routing”-> “Default Gateway” to enter the screen below.


Routing -- Default Gateway
Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the highest and the last one the lowest priority if the WAN interface is connected.Priority order can be changed by removing all and adding them back in again.
Selected Default Gateway Interfaces
Available Routed WAN Interfaces
eth3
->
<-
Apply/Save

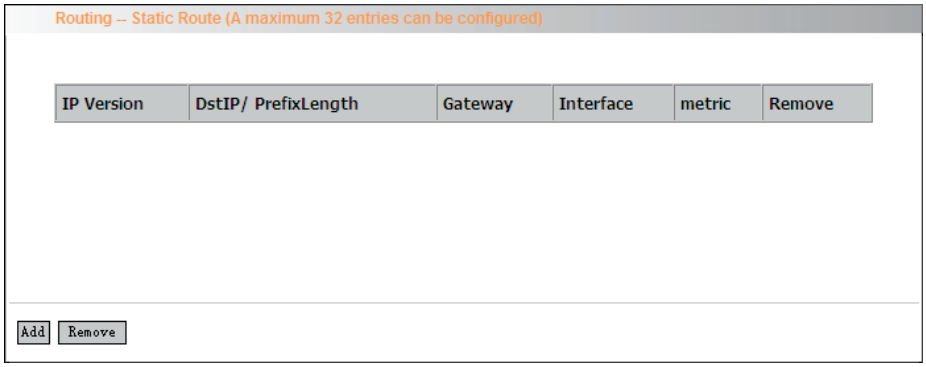
Available Routed WAN Interfaces: Current existed WAN connection.

Selected Default Gateway Interfaces: WAN connection has already been selected as the gateway.

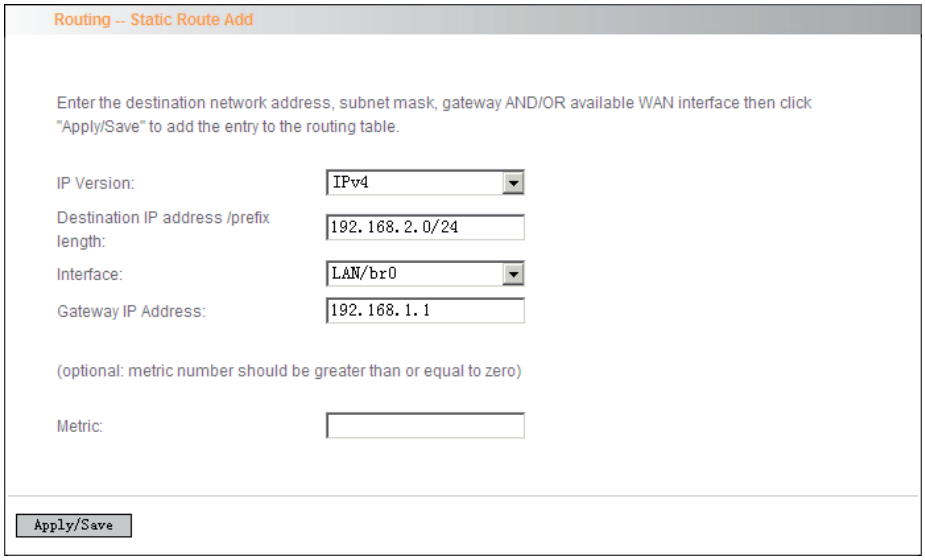
Select the WAN connection that you want to set as the gateway and click “Apply/Save” to save the settings. The settings will be effective after the system reboot.

Static Route

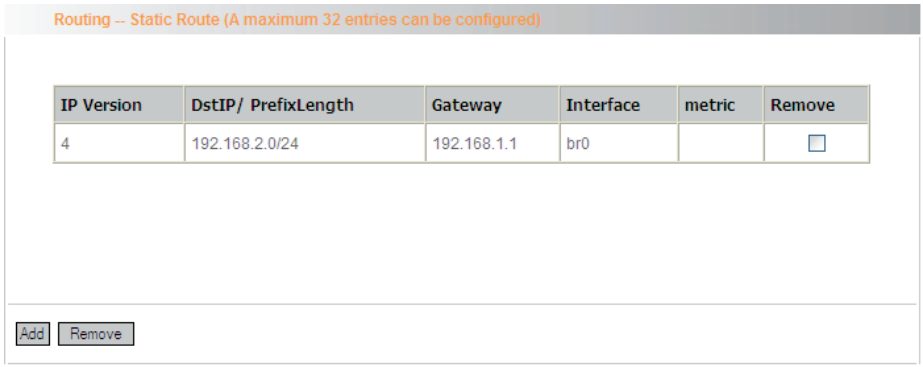
Static Route is a special route. When you use proper static routing in networks, you can reduce routing selection problems and the forwarding rate of the data packets. IP address, subnet mask and gateway can be set to specify a routing item. Destination IP address and subnet mask can be used to specify an object network/ host. Then the Router will send the packets to the specific object network/ host.



Click “Add” to enter the screen below.


Routing -- Static Route Add
Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click "Apply/Save" to add the entry to the routing table.
IP Version:
IPv4
Destination IP address /prefix length:
192.168.2.0/24
Interface:
LAN/br0
Gateway IP Address:
192.168.1.1
(optional: metric number should be greater than or equal to zero)
Metric:
Apply/Save

Click “Apply/Save” to display the current configured static route information.



- **IP version:** It is used to indicate that the IP belongs to IPv4.
- **Destination IP address/prefix length:** to identify the destination IP address or network that the data is sending to. Prefix length together with the destination IP address are used to identify the destination network.
- **Interface:** the interface the data is sending to
- **Gateway IP address:** the IP address of the router or host the data packets are sending to.
- **Metric:** the number of the routers that the data packets go through (optional).
- **Apply /Save:** Complete the settings.

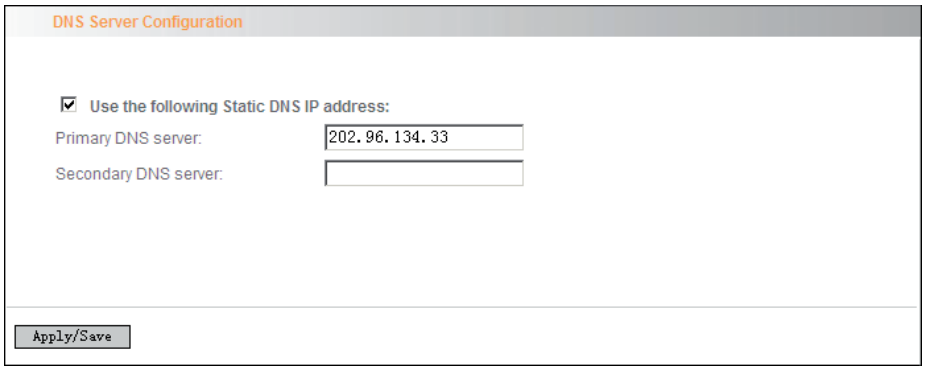
Note:

- Destination IP address cannot be at the same net segment with the IP addresses of the router's WAN or LAN port.
- We recommend using the default settings if there is no special requirement, for inappropriate or incorrect route setting would cause network malfunction.

4.2.12 DNS

DNS server

DNS server is used to map the domain name and it can be automatically obtained when you connect to the ISP or it can also be manually configured.



After entering the DNS server IP address, click "Apply/Save" to save the settings.

Note:

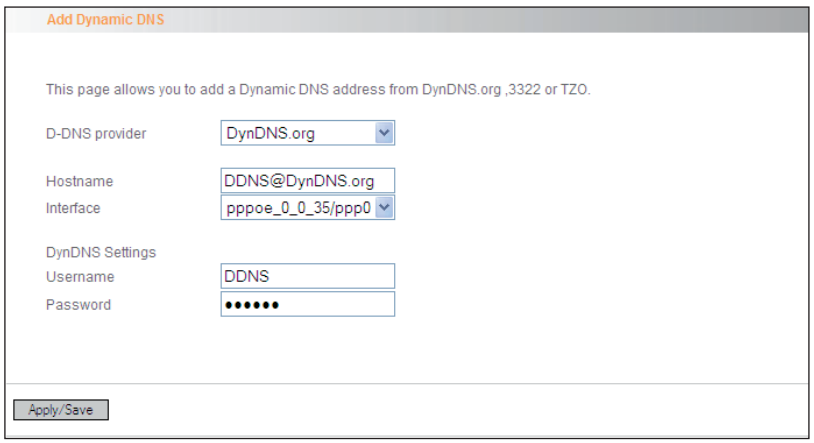
- After saving the settings, you need to reboot the router to bring the new configuration into effect.
- Please keep the default settings if there is no special requirement for incorrect DNS settings will cause the LAN computer to be unable to access the Internet via the domain name.

DDNS

If your server is set up on the router's LAN side, and the router's WAN IP address is changeable. When users on the Internet want to visit the server via the domain name, but the domain name can not be translated as the router's WAN IP, which will cause visit failure. However, DDNS will request the corresponding ISP to update the domain name and IP address when WAN IP is changed. When the WAN IP address is updated, users on the Internet can still successfully visit the server.

This router supports three DDNS providers: www.dyndns.org, www.3322.org, www.tzo.com

Select “Advanced Setup” ->“DNS” -> “Dynamic DNS”, and click the “Add” button to add a rule.



Dynamic DNS Provider: Select your DDNS provider.

Hostname: The domain name registered at the corresponding DDNS website.

Interface: WAN connection interface

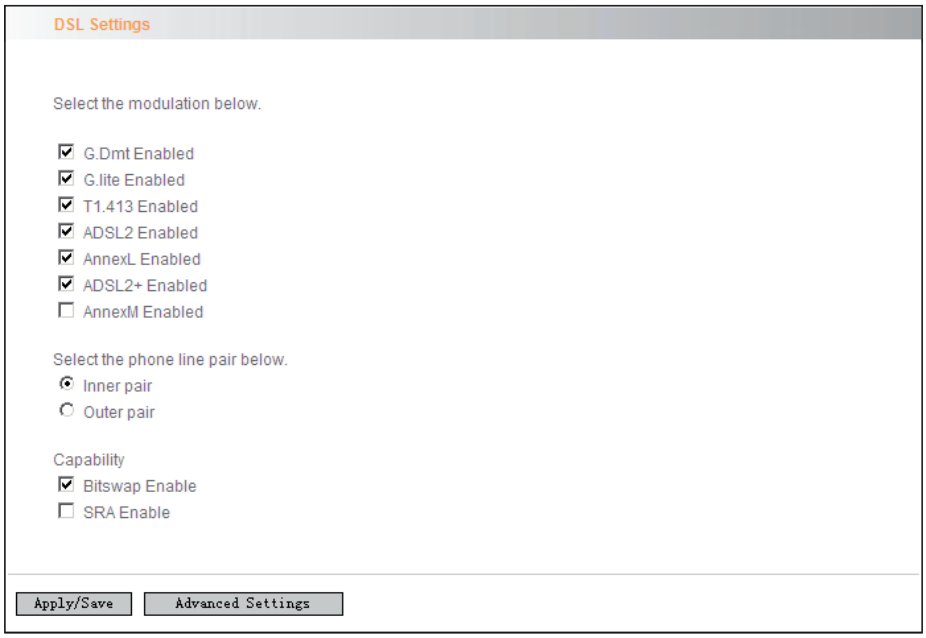
Username: Enter the username that you use to register from the DDNS provider

Password: Enter the password that you use to register from the DDNS provider

Click “Apply/Save” to save the settings.

4.2.13 DSL

To be applicable for different environments, DSL advanced setting screen provides multiple ASDL modulation modes for users to choose.

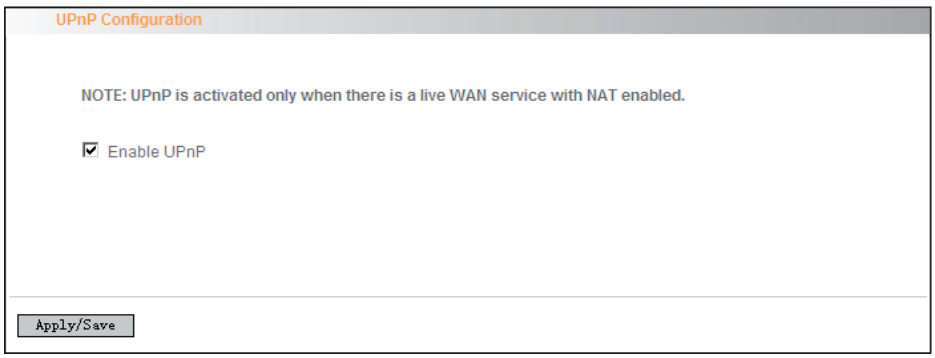


Click the checkbox to enable corresponding modulation modes, and then click “Apply/Save” to complete the settings.

Note: If you are not familiar with the ADSL modulation modes, please use the default settings.

4.2.14 UPnP

With UPnP (Universal Plug and Play) function, the host in LAN can request the Router to carry specific port forwarding, thus the external host can access the internal host for resources. For example, the MSN Messenger under Windows XP and Windows Me can utilize UPnP in video and audio communication, thus the function restricted by NAT can restore its normal use. Enable UPnP to help support applications that would not otherwise work behind a Router. Both UPnP Internet Gateway Device and NAT Traversal are supported.



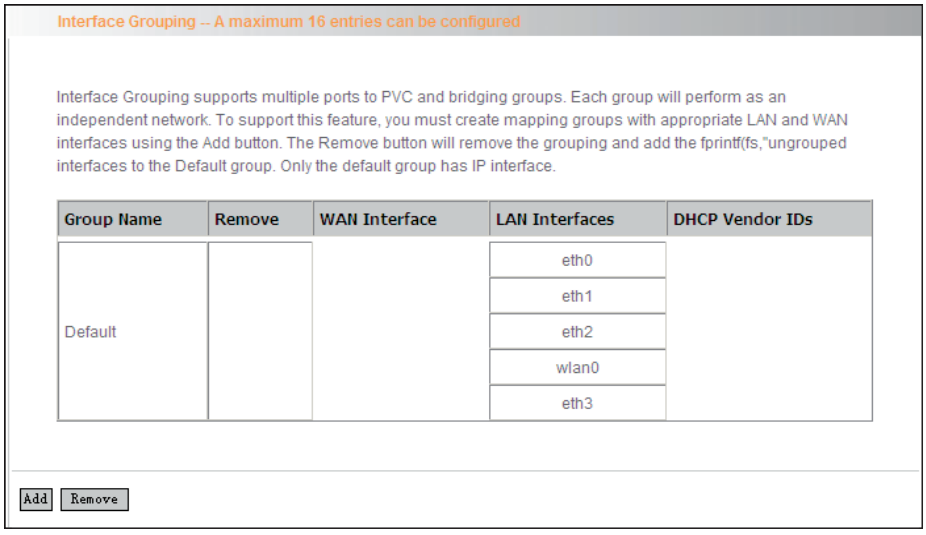
Select "Enable UPnP" and then click "Apply/Save" to save the settings.

⚠ Note:

1. Because the security of current UPnP version has not been guaranteed, please close it when you do not need it.
2. Only the application programs that support UPnP protocol can use this function. MSN Messenger may need to be supported by Operating Systems such as Windows XP/ ME.
3. UPnP function needs the support from Operating Systems such as Windows XP/ME.

4.2.15 Interface Grouping

If your ADSL line supports multi-WAN connection(there are multiple groups of PPPOE or other access modes),and you wish some LAN ports of your router(or the wireless network) to solely share one of the WAN ports, then you may fulfill this function by configuring the interface grouping.

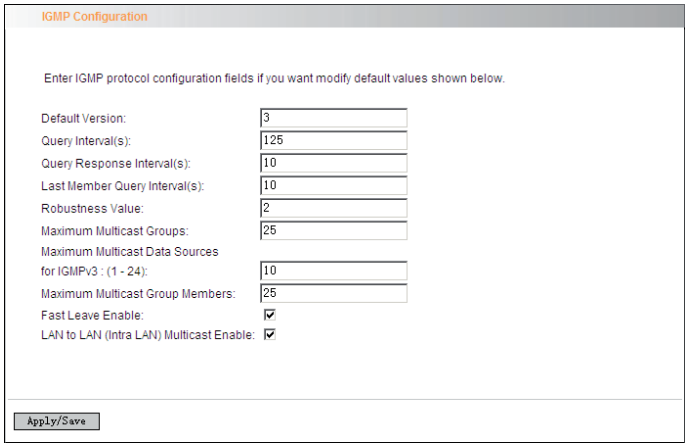

Interface Grouping -- A maximum 16 entries can be configured
Interface Grouping supports multiple ports to PVC and bridging groups. Each group will perform as an independent network. To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the Add button. The Remove button will remove the grouping and add the fprintf(fs,"ungrouped interfaces to the Default group. Only the default group has IP interface.
Group Name
Remove
WAN Interface
LAN Interfaces
DHCP Vendor IDs
Default
eth0
eth1
eth2
wlan0
eth3
Add
Remove

- Group Name: The name of the configuration rule.
- WAN Interface used in the grouping: WAN connection that needs to be grouped.
- Available LAN Interfaces: Interfaces that can be grouped.
- Grouped LAN Interfaces: LAN interface that needs to connect with specified WAN interface

4.2.16 Multicast

IGMP Configuration

Click “Advanced Setup”-> “Multicast” to enter the IGMP Configuration screen.

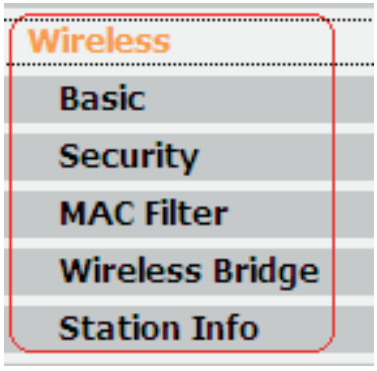

IGMP Configuration
Enter IGMP protocol configuration fields if you want modify default values shown below.
Default Version: 3
Query Interval(s): 125
Query Response Interval(s): 10
Last Member Query Interval(s): 10
Robustness Value: 2
Maximum Multicast Groups: 25
Maximum Multicast Data Sources for IGMPv3 : (1 - 24): 10
Maximum Multicast Group Members: 25
Fast Leave Enable:
LAN to LAN (Intra LAN) Multicast Enable:
Apply/Save

You can configure IGMP parameters on this screen, if you are not clear about the IGMP, we recommend using the default configuration.

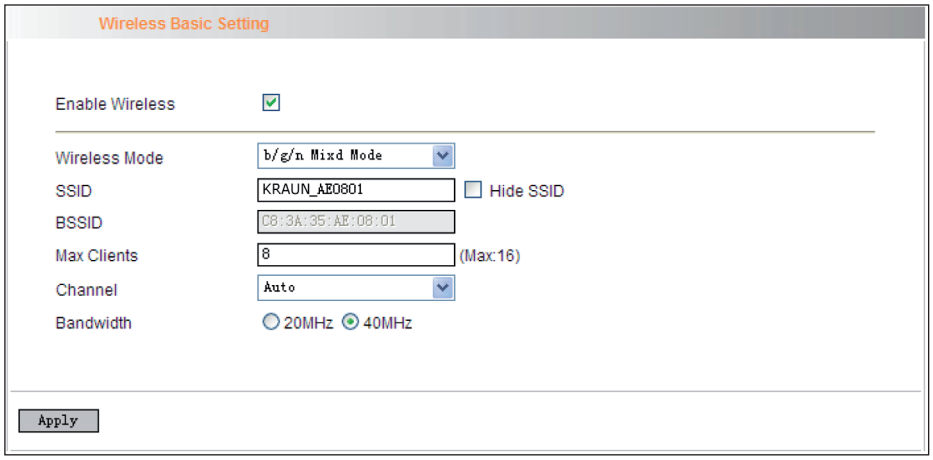
If you want to modify the configured parameters, please make sure whether the router’s IGMP feature is enabled.

4.3 Wireless Setting

Wireless function includes “Basic”, “Security”, “MAC Filter”, “Wireless Bridge” and “Station Info”.



4.3.1 Basic Setting



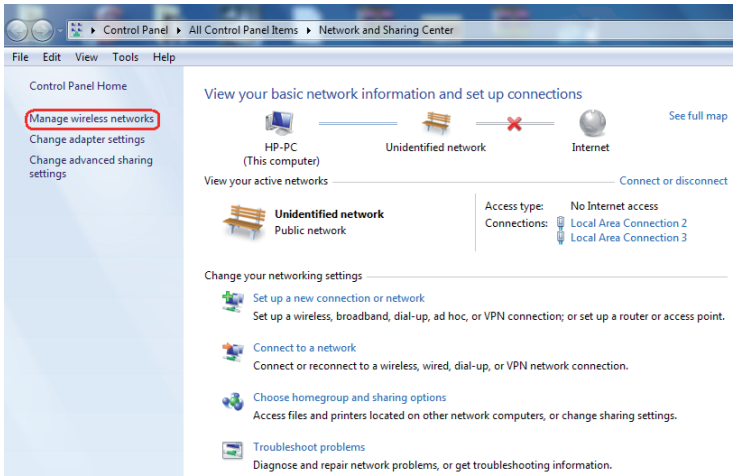
- **Enable Wireless:** check/uncheck to enable/disable the wireless function.

Wireless Mode:

- **b/g/n Mixed Mode:** By default, system is in this mode. Therefore, your network adapter can connect to the router's wireless network no matter which standard it complies with: 802.11b, 802.11g or 802.11n. (Different wireless network standards have different maximum transmission rates: 802.11b mode is at 11Mbps 802.11g mode at 54 Mbps and 802.11n mode at 150Mbps.
- **b/g Mixed Mode:** If this mode is selected, then wireless adapters in use must support 802.11b or 802.11g mode.
- **g Mode:** If this mode is selected, then wireless adapters in use must support 802.11g mode.
- **SSID:** the name of wireless network. It can divide a wireless LAN into several sub-networks that requires different identity authentication, and allows itself to be scanned by other wireless devices through broadcast. The name displayed in "View available wireless networks" under Windows is a SSID.
- **Hide SSID:** If you do not want wireless network to be searched by other users via SSID name, then you had better prohibit SSID broadcast. As a result, your wireless network will not appear in the searched wireless network list but it is still available, you only need to add it to the list manually. The following example teaches you how to add a wireless network under Windows 7:

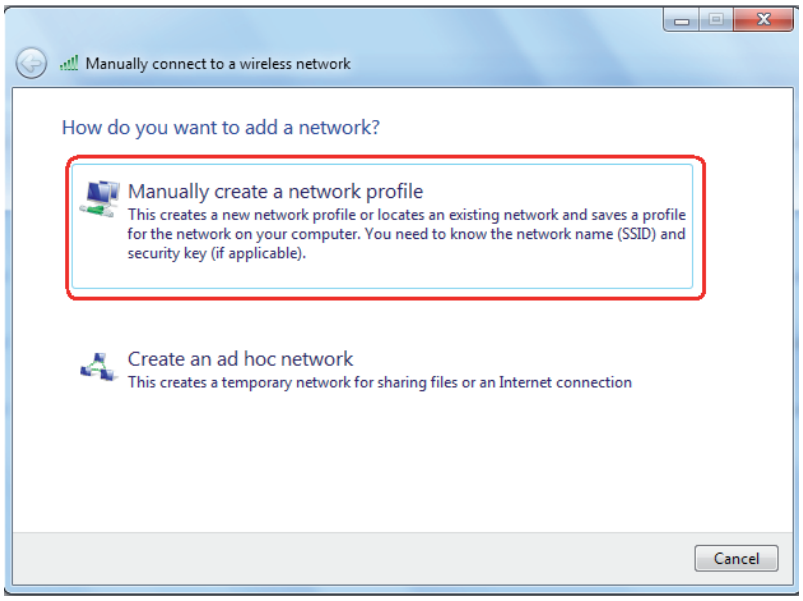
Step1: Click icon on bottom right corner as shown in the above figure to display "Currently connected to".

Step2: Click "Open Network and Sharing Center" to enter the configuration interface below.


Control Panel ▸ All Control Panel Items ▸ Network and Sharing Center
File Edit View Tools Help
Control Panel Home
Manage wireless networks
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
See full map
HP-PC
(This computer)
Unidentified network
Internet
View your active networks
Connect or disconnect
Unidentified network
Public network
Access type: No Internet access
Connections: Local Area Connection 2
Local Area Connection 3
Change your networking settings
Set up a new connection or network
Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.
Connect to a network
Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.
Choose homegroup and sharing options
Access files and printers located on other network computers, or change sharing settings.
Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.

Step3: Click “Manage Wireless Network” to enter the page below:

Step4: Click the “Add” button on the page above to enter “Manually connect to a wireless network” and select “Manually create a network profile” on the page below:

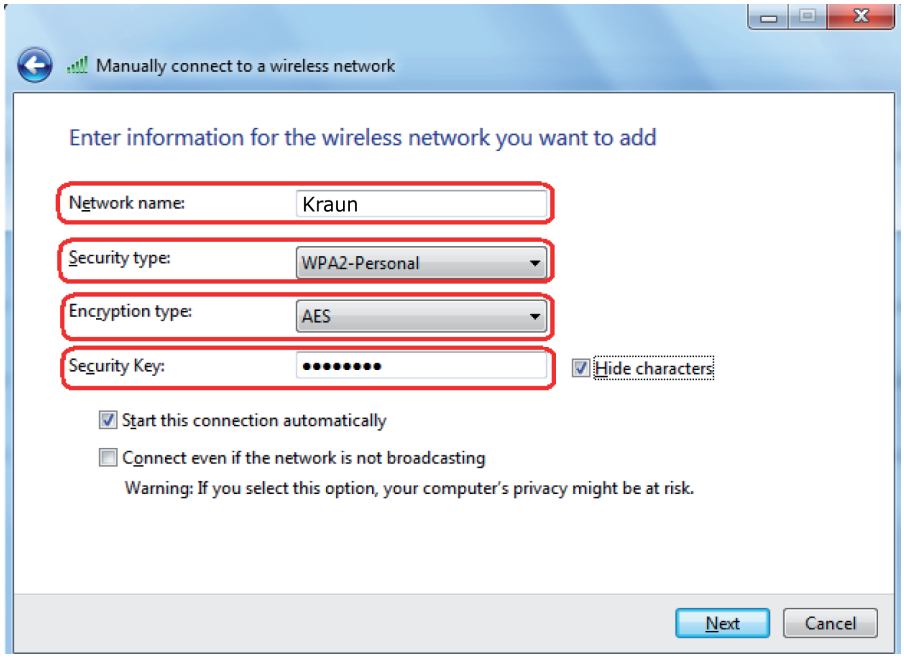

Manually connect to a wireless network
How do you want to add a network?
Manually create a network profile
This creates a new network profile or locates an existing network and saves a profile for the network on your computer. You need to know the network name (SSID) and security key (if applicable).
Create an ad hoc network
This creates a temporary network for sharing files or an Internet connection
Cancel

Step5: Enter the required wireless network information on the page below, and then click “Next”.

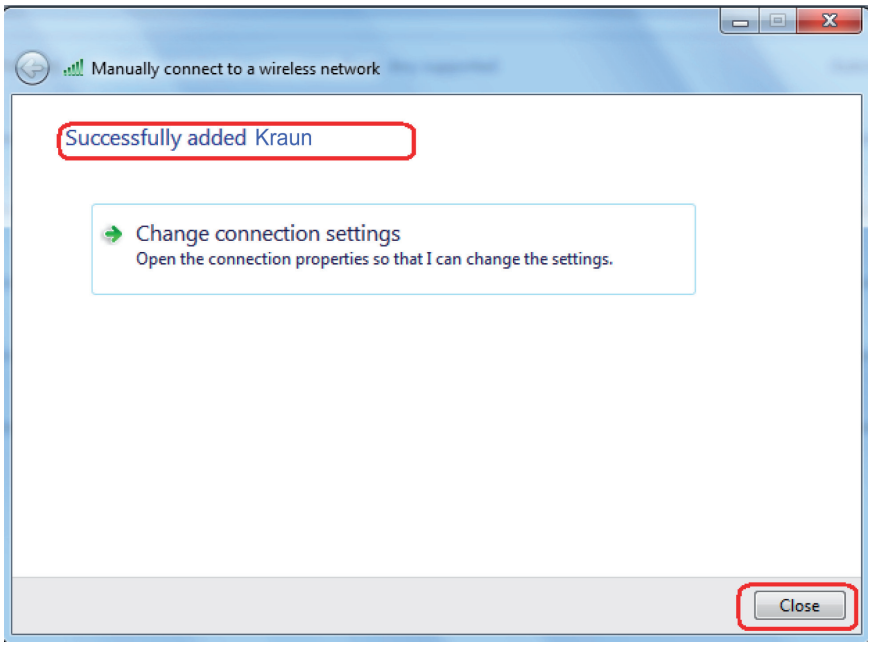
Network name: It is the name of the wireless network to add (SSID).

Security type: It is authentication method of the wireless network.

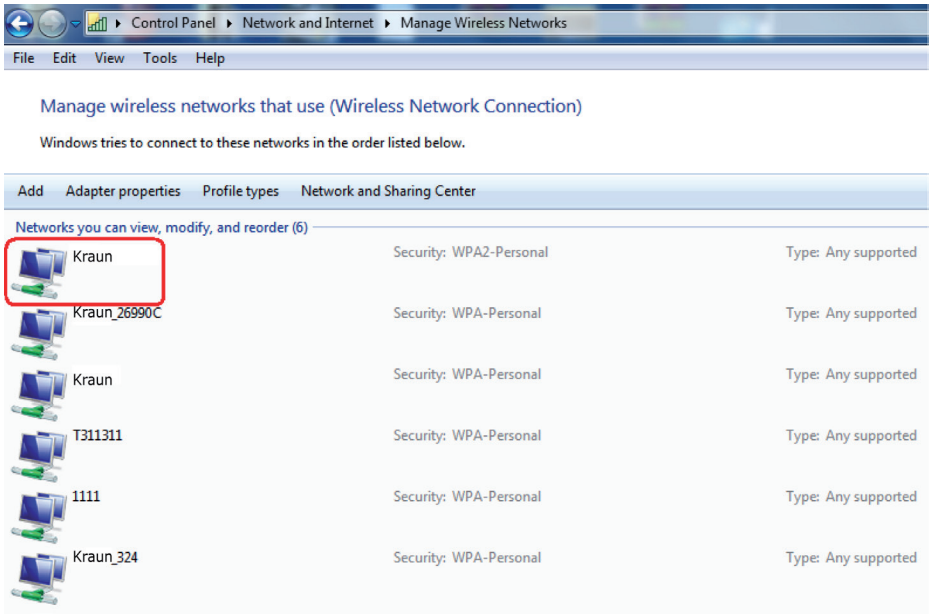
Security key: It is the security key of the wireless network.



Step6: Click the "Close" button and you have finished the operations of manually adding wireless network


Manually connect to a wireless network
Successfully added Kraun
Change connection settings
Open the connection properties so that I can change the settings.
Close

Step7: Now, you can go to check the added wireless network on the page below by clicking "Manage wireless network".

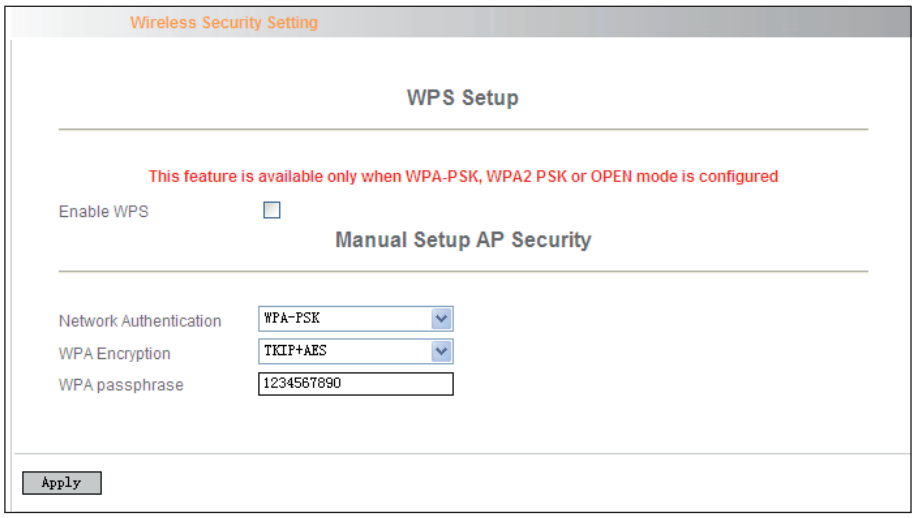

Control Panel ▸ Network and Internet ▸ Manage Wireless Networks
File Edit View Tools Help
Manage wireless networks that use (Wireless Network Connection)
Windows tries to connect to these networks in the order listed below.
Add Adapter properties Profile types Network and Sharing Center
Networks you can view, modify, and reorder (6)
Kraun Security: WPA2-Personal Type: Any supported
Kraun_26990C Security: WPA-Personal Type: Any supported
Kraun Security: WPA-Personal Type: Any supported
T311311 Security: WPA-Personal Type: Any supported
1111 Security: WPA-Personal Type: Any supported
Kraun_324 Security: WPA-Personal Type: Any supported

- **BSSID:** BSS is a special Ad-hoc LAN application. A wireless network consists of, at least, an AP that is connected to wired network and several wireless workstations, which is called BSS (Basic Service Set).

A group of PCs with the same BBS name can establish a group, and this BBS name is called BSSID. In a small wireless LAN environment, there is only one AP and all clients share the same BSSID, which is usually the MAC address of the AP.

- **Max Clients:** The max number of wireless clients that are allowed to be connected to the wireless network is 16 and system default is 8. You can modify it manually (The Max number is 16).
- **Channel**: wireless signal needs to be transferred through a certain channel. If two transmission signals are using the same channel, then mutual interference will be caused to decrease communication efficiency. There are 13 channels (1 to 13) for your option. Thus, to avoid interferences, you are recommended to choose the channel that is different from that of another SSID. If you select "Auto", then system will automatically choose a channel with relatively less interference for your wireless network.
- **Bandwidth:** The bandwidth here refers to wireless signal's frequency width that only functions in b/g/n mixed wireless mode.

4.3.2 Security Setting

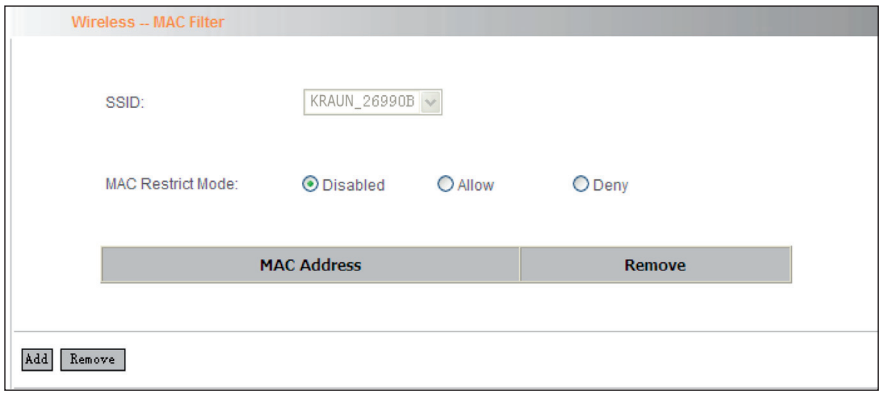


- **WPS Setup:** Wi-Fi protected setting (WPS) can create encrypted connection between wireless network clients and the router simply and quickly. Without selecting an encryption mode and configuring a key, you only need to enter the correct PIN code or select the "Push Button" (press the WPS button on the router's back panel) to easily configure WPS. Instructions for operation are described below:
- **Push Button:** Press the WPS button for about 1 second and the WPS LED will keep flashing for about 2 minutes, which indicates the function is enabled. During this time, wireless client can enable WPS/PBC for authentication negotiation; if negotiation succeeds, then the WPS LED remains "always on". A wireless client is successfully connected.
- **PIN:** To use PIN, you must know wireless client's PIN code and input it in its text box, then save this configuration. Meanwhile, use the same PIN code in the client for connection.
- **Enable WPS:** check/uncheck to enable/disable the WPS function. It is disabled by default. **Note:** The WPS feature only functions with wireless network available.

- Network Authentication: To secure your wireless network, system provides several authentication modes:
- **Open:** you can select "no encryption" or WEP (64 bits/128 bits) as encryption algorithm.
- **Shared:** you can select WEP 64 bits/ WEP 128 bits as encryption algorithm.
- **WPA-PSK:** you can select AES, TKIP or TKIP+AES as encryption algorithm.
- **WPA2-PSK:** you can select AES, TKIP or TKIP+AES as encryption algorithm.
- **Mixed WPA/ WPA2-PSK:** you can select AES, TKIP or TKIP+AES as encryption algorithm.

4.3.3 MAC Filter

MAC address filter can allow or refuse specific clients to access your wireless network, see the screen below:



Disabled: Select it to disable MAC filter function.

Allow: only allows clients in the MAC address list to access your wireless network.

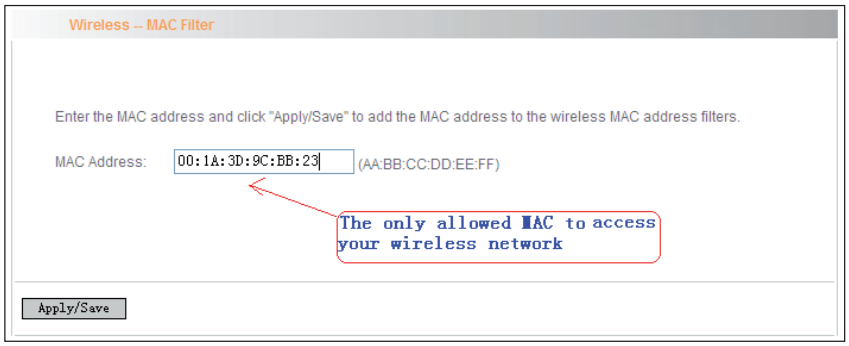
Deny: only prohibits clients in the MAC address list from accessing your wireless network.

Add: to add a MAC address, click the "Add" button.

To delete an added MAC address, first check the "Remove" box behind the MAC address in list and then click the "Remove" button.

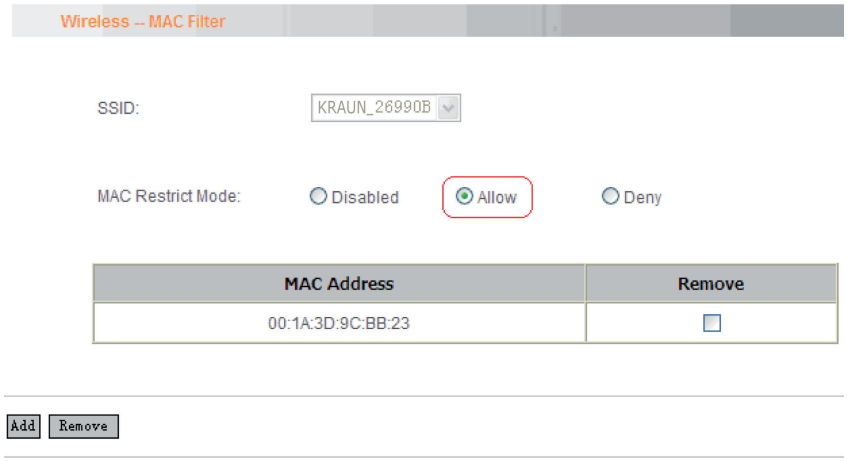
Example 1: If you want to allow the PC with MAC address of 00:1A:3D:9C: BB: 23 only to access your wireless network, then follow the instructions below:

Click the "Add" button in the above screen to enter the page below and enter the MAC address 00:1A:3D:9C: BB: 23 in the text box as shown in the below figure:


Wireless -- MAC Filter
Enter the MAC address and click "Apply/Save" to add the MAC address to the wireless MAC address filters.
MAC Address:
00:1A:3D:9C:BB:23
(AA:BB:CC:DD:EE:FF)
The only allowed MAC to access your wireless network
Apply/Save

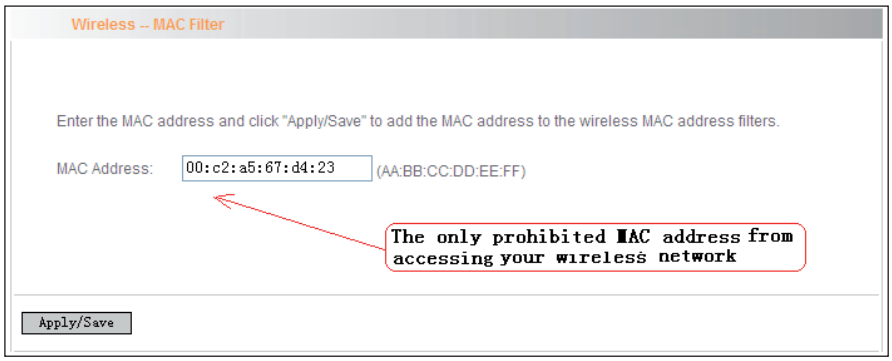
Then click the "Apply/Save" button on the above screen to save the parameter.

Select "Allow" on the page below:



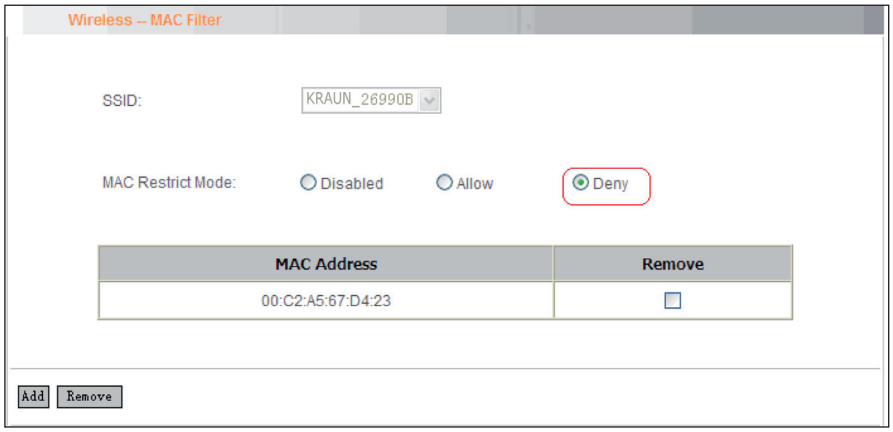
Example 2: If you want to prohibit the PC with MAC address of 00:c2:a5:67:d4:23 only from accessing your wireless network, then follow the instructions below:

1. Enter the Wireless--MAC filter page and click the "Add" button to enter the page below and enter the MAC address 00:c2:a5:67:d4:23 in the text box as shown in the below figure:


Wireless -- MAC Filter
Enter the MAC address and click "Apply/Save" to add the MAC address to the wireless MAC address filters.
MAC Address:
00:c2:a5:67:d4:23
(AA:BB:CC:DD:EE:FF)
The only prohibited MAC address from accessing your wireless network
Apply/Save

Then click the "Apply/Save" button on the above screen to save the parameter.

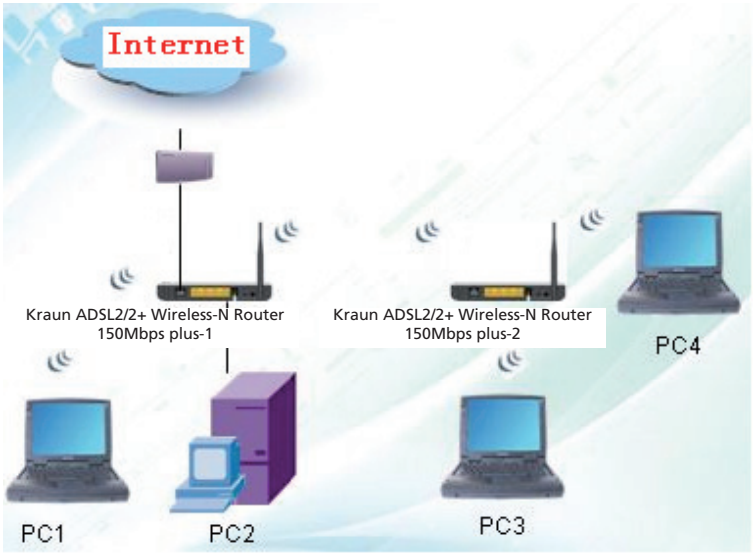
2. Select "Deny" on the page below:



4.3.4 Wireless Bridge

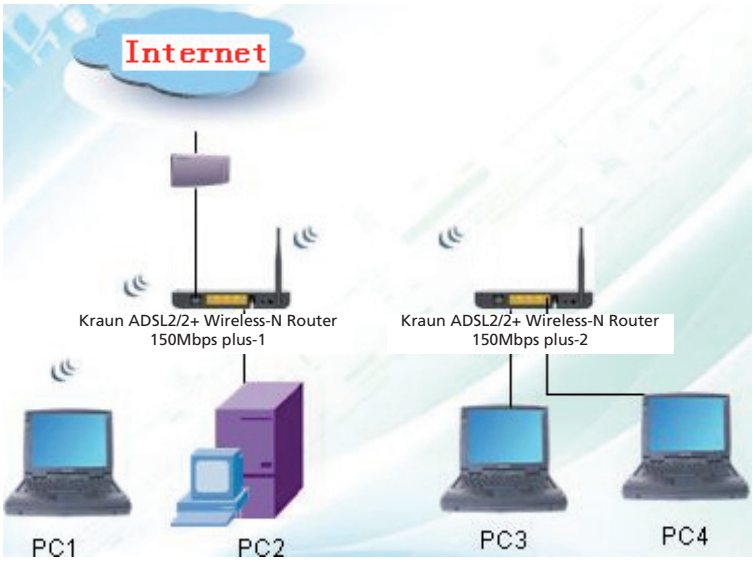
Wireless Distribution System is used to extend the existing wireless signal coverage. Wireless bridge includes 2 modes:

1. Access point (Once it is selected, the AP function will be enabled while wireless bridge function will be reserved. Moreover, wireless base station will establish bridge with the AP in the meantime. Namely, you can establish communication with wireless base station through a wireless network adapter) as shown in the figure below:



In the above figure, two Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-s are used to enlarge wireless signal coverage. Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-2 is configured as a wireless access point to establish a wireless bridge with Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-1. In the meantime, the AP function reserved in Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-2 enables PC3 and PC4 to communicate with Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-2 and access Internet through wireless network adapters.

2. Wireless bridge (Here in this mode, wireless is used as pure bridge only with no more AP function to connect and communicate with remote devices. Namely, your PC can only be connected to the device via wired media instead of communicating with the device through wireless network adapter.) See the figure below:

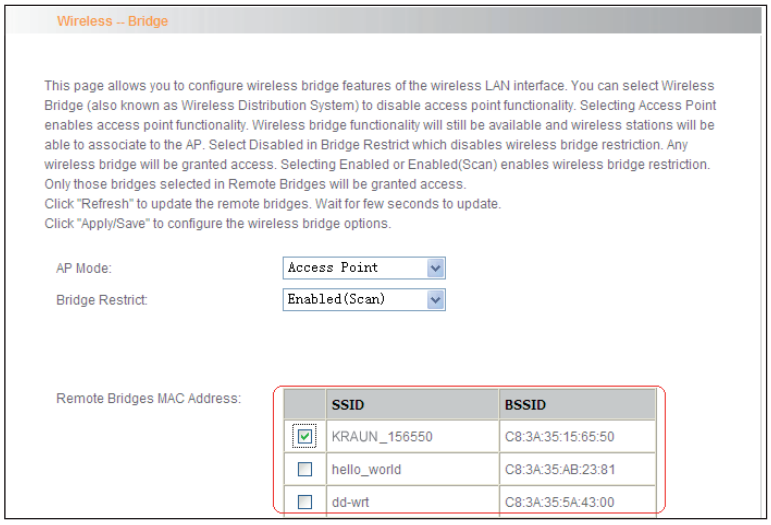


In the above figure, two Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus" are used to enlarge wireless signal coverage. Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-2 is configured as a wireless bridge to establish a wireless bridge with Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-1. Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-2, here, does not have the AP function, thus, PC3 and PC4 can communicate with Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus"-2 and access Internet only through wired network adapters instead of wireless ones.

Bridge Restrict:There are three options available: Enabled, Enabled (Scan) and Disabled.

Enabled: Select it to enable wireless bridge function. You need to know the MAC address of a remote bridge and enter it manually. 4 MAC addresses of remote bridges can be saved to simultaneously establish bridges with 4 APs.

Enabled (Scan): Select it to enable wireless bridge function. In the meantime, system will automatically scan MAC addresses of available wireless devices. See the figure below:


Wireless -- Bridge
This page allows you to configure wireless bridge features of the wireless LAN interface. You can select Wireless Bridge (also known as Wireless Distribution System) to disable access point functionality. Selecting Access Point enables access point functionality. Wireless bridge functionality will still be available and wireless stations will be able to associate to the AP. Select Disabled in Bridge Restrict which disables wireless bridge restriction. Any wireless bridge will be granted access. Selecting Enabled or Enabled(Scan) enables wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access.
Click "Refresh" to update the remote bridges. Wait for few seconds to update.
Click "Apply/Save" to configure the wireless bridge options.
AP Mode:
Access Point
Bridge Restrict:
Enabled(Scan)
Remote Bridges MAC Address:
SSID
BSSID
KRAUN_156550
C8:3A:35:15:65:50
hello_world
C8:3A:35:AB:23:81
dd-wrt
C8:3A:35:5A:43:00

You only need to check the wireless network that you want to bridge with and click the "Apply/Save" button. And system will automatically establish wireless bridge with the remote device for you.

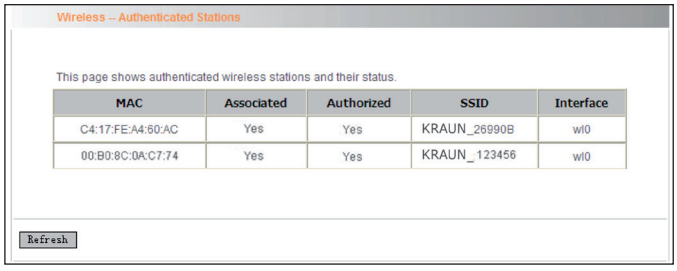
Disabled: To disable wireless bridge function, select this option.

Note:

To use the wireless bridge function, both devices must support the function. Besides, SSID, channel, encryption method and key of one device must be set to the same value of its link partner's.

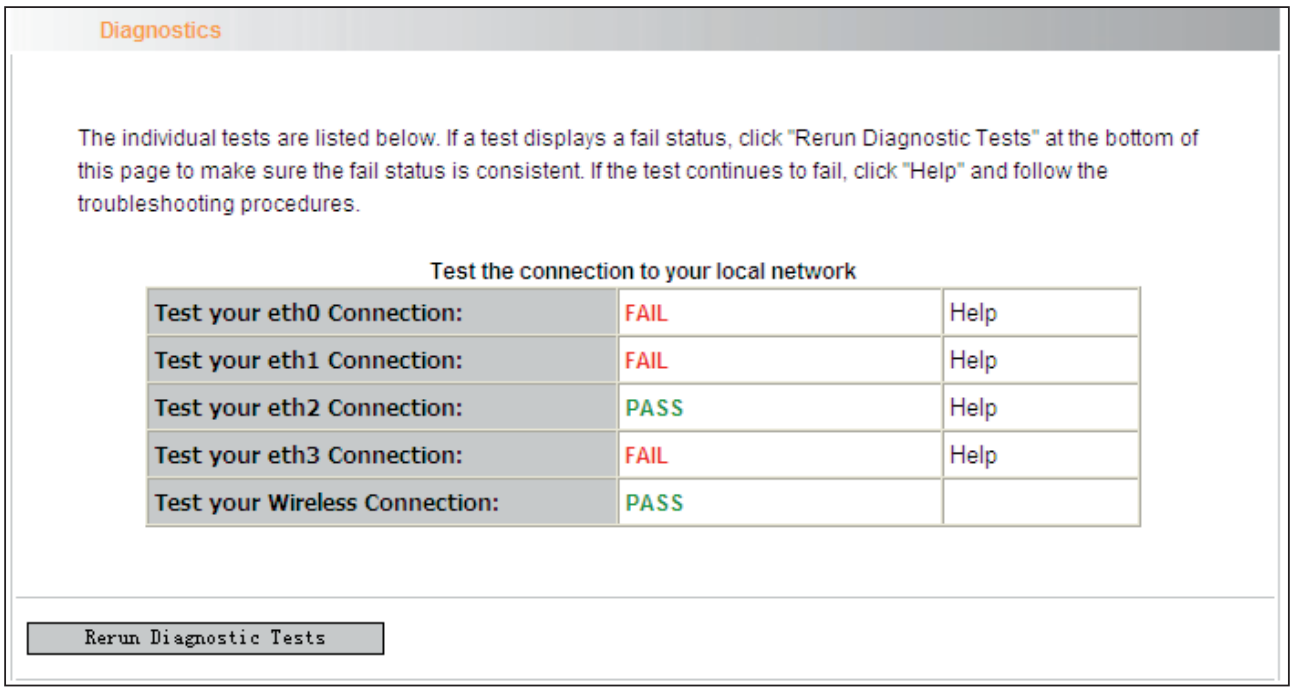
4.3.5 Station Info

This page shows authenticated wireless stations and their status.



4.4 Diagnostics

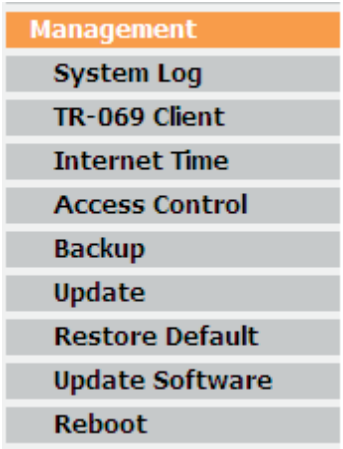
Through the Diagnostics function, you can check connection status of the router's interfaces. When a connection is successfully established, its status displays a "PASS", otherwise it displays a "FAIL" click ". To enter the page below, click the "Diagnostics" tab on the left navigation menu column:


Diagnostics
The individual tests are listed below. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.
Test the connection to your local network
Test your eth0 Connection: FAIL Help
Test your eth1 Connection: FAIL Help
Test your eth2 Connection: PASS Help
Test your eth3 Connection: FAIL Help
Test your Wireless Connection: PASS
Rerun Diagnostic Tests

If you are not clear about the test result, please click "Help" for more details.

4.5 Management

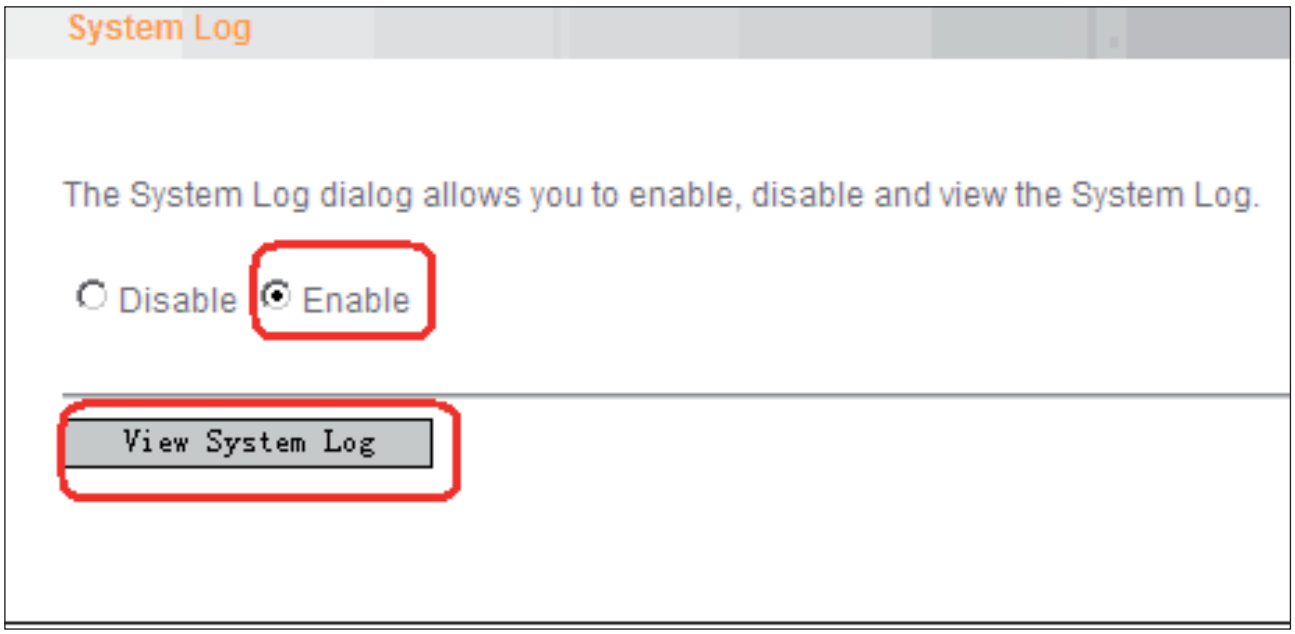
Management settings include: system log, TR-069 client, Internet time, access control, backup, update, restore default, update software and reboot, as shown in the picture below.



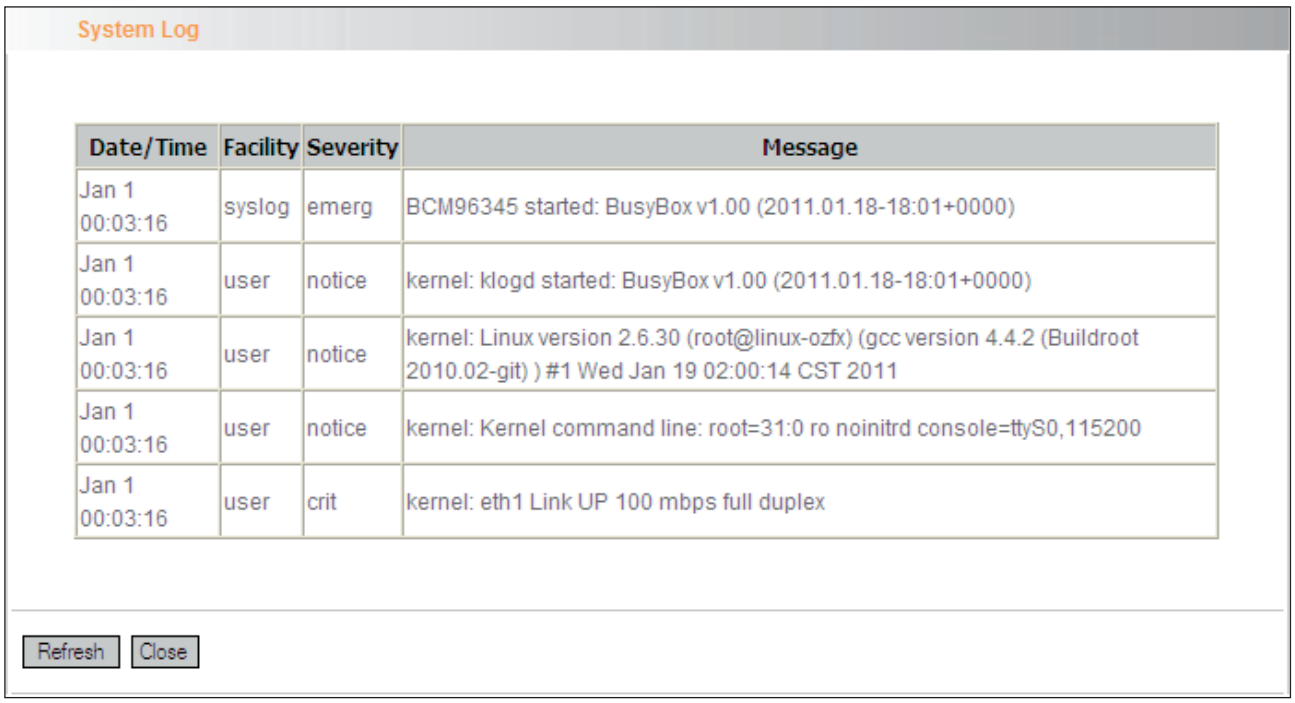
4.5.1 System log

System log records the running status of Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus", such as ADSL dial-up procedure and data packets records and so on. To view the log, please follow the steps below.

1. Click "System Log" to enter the "System Log" screen and click the radio button before "Enable" (Note: The function is disabled by system default).

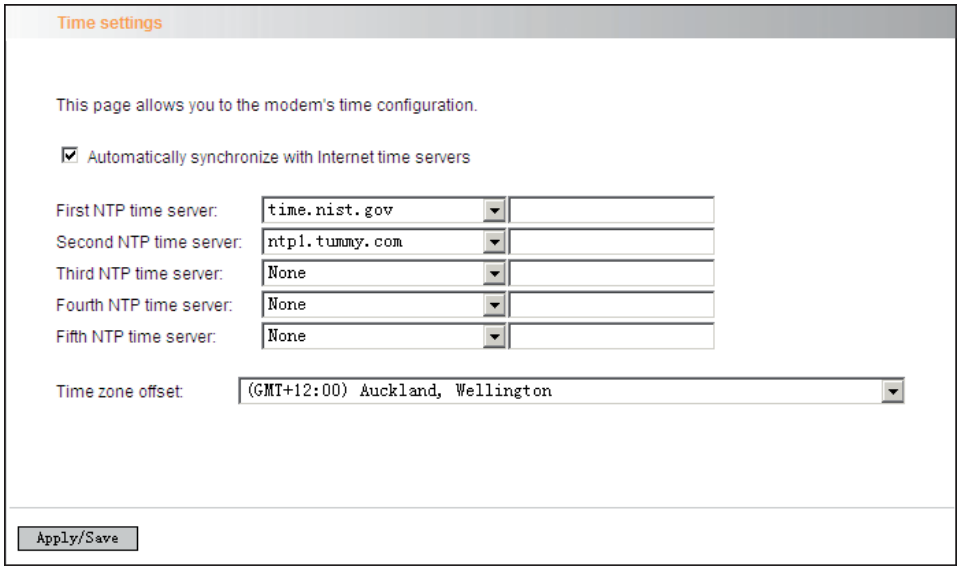


2. Click "View System Log" and you can check the logs on the appearing screen.


System Log
Date/Time Facility Severity Message
Jan 1 00:03:16 syslog emerg BCM96345 started: BusyBox v1.00 (2011.01.18-18:01+0000)
Jan 1 00:03:16 user notice kernel: klogd started: BusyBox v1.00 (2011.01.18-18:01+0000)
Jan 1 00:03:16 user notice kernel: Linux version 2.6.30 (root@linux-ozfx) (gcc version 4.4.2 (Buildroot 2010.02-git)) #1 Wed Jan 19 02:00:14 CST 2011
Jan 1 00:03:16 user notice kernel: Kernel command line: root=31:0 ro noinitrd console=ttyS0,115200
Jan 1 00:03:16 user crit kernel: eth1 Link UP 100 mbps full duplex
Refresh
Close

4.5.2 Internet Time

Internet time synchronization is used to update the router's system time so that the router's system time accords with the Internet time. The default setting selects "Automatically synchronize with Internet time servers", as shown in the picture below.

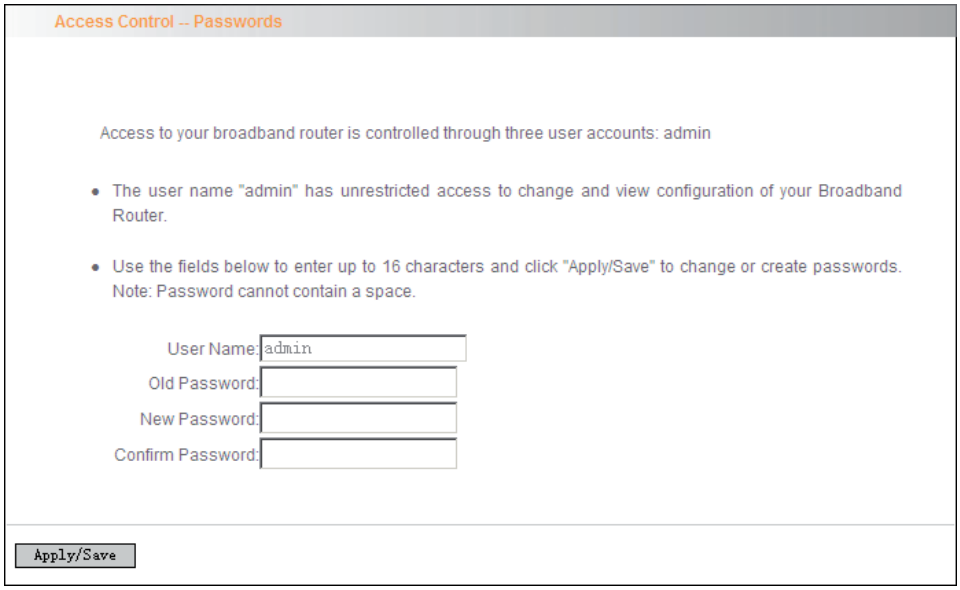


Note: NTP time server is used to update the time. Select "Time zone offset" as the time zone where you are.

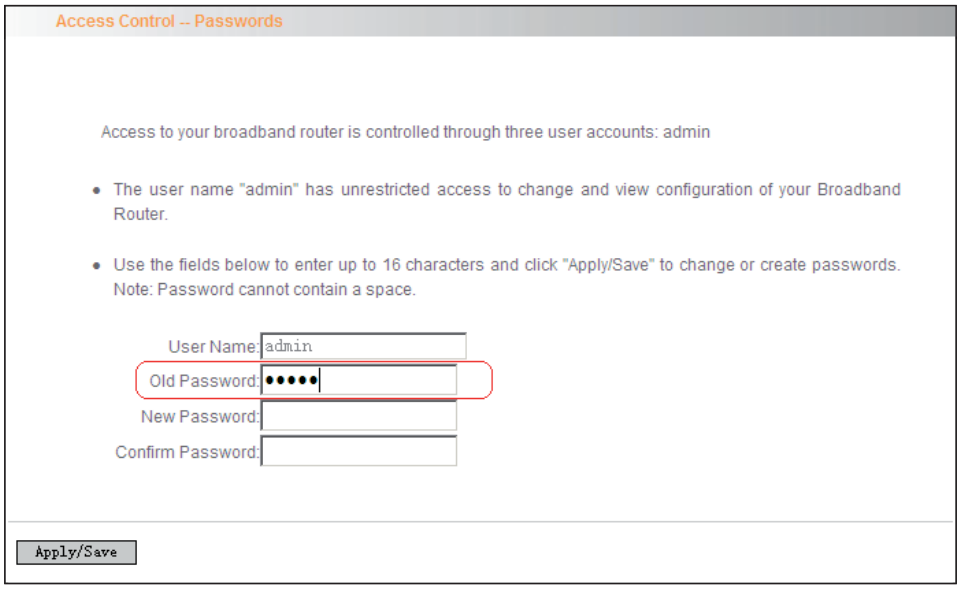
4.5.3 Access Control

This screen allows you to change the device's login password, which is admin by default.

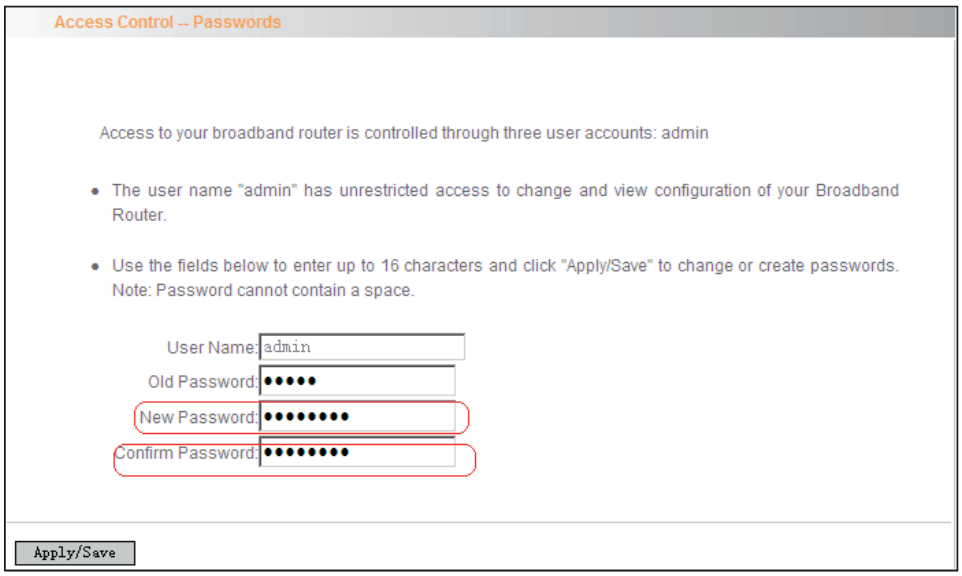
1. Click "Access Control" to enter the "Access Control-Passwords" screen.


Access Control -- Passwords
Access to your broadband router is controlled through three user accounts: admin
The user name "admin" has unrestricted access to change and view configuration of your Broadband Router.
Use the fields below to enter up to 16 characters and click "Apply/Save" to change or create passwords. Note: Password cannot contain a space.
User Name:
admin
Old Password:
New Password:
Confirm Password:
Apply/Save

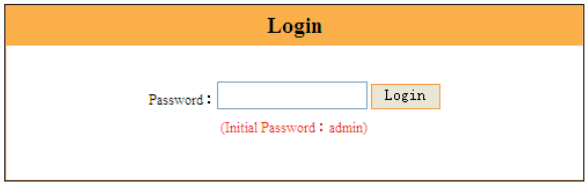
2. Enter the router's current login password in the old password textbox.


Access Control -- Passwords
Access to your broadband router is controlled through three user accounts: admin
The user name "admin" has unrestricted access to change and view configuration of your Broadband Router.
Use the fields below to enter up to 16 characters and click "Apply/Save" to change or create passwords. Note: Password cannot contain a space.
User Name: admin
Old Password:
New Password:
Confirm Password:
Apply/Save

3. Enter the password you wish to set in the new password and confirm password textboxes.


Access Control -- Passwords
Access to your broadband router is controlled through three user accounts: admin
The user name "admin" has unrestricted access to change and view configuration of your Broadband Router.
Use the fields below to enter up to 16 characters and click "Apply/Save" to change or create passwords. Note: Password cannot contain a space.
User Name: admin
Old Password:
New Password:
Confirm Password:
Apply/Save

4. After clicking Apply/Save, the login dialog will pop up.

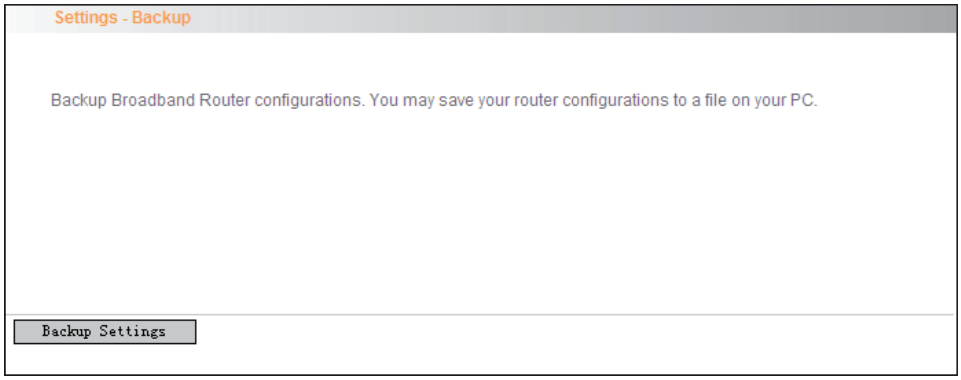


5. Enter the new password you have set to re-enter the router's setup wizard screen.

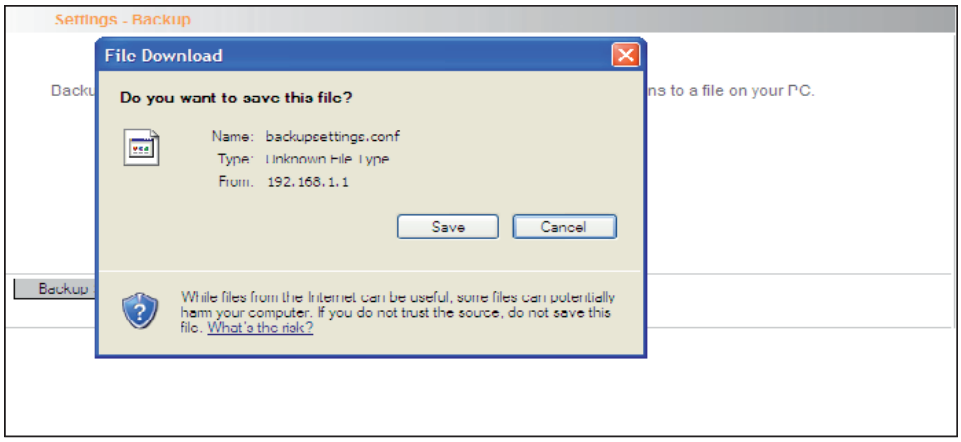
4.5.4 Backup

With backup settings, you can back up your router's configuration. The steps are as follows:

1. Click "Backup" to enter the "Settings—Backup" screen.


Settings - Backup
Backup Broadband Router configurations. You may save your router configurations to a file on your PC.
Backup Settings

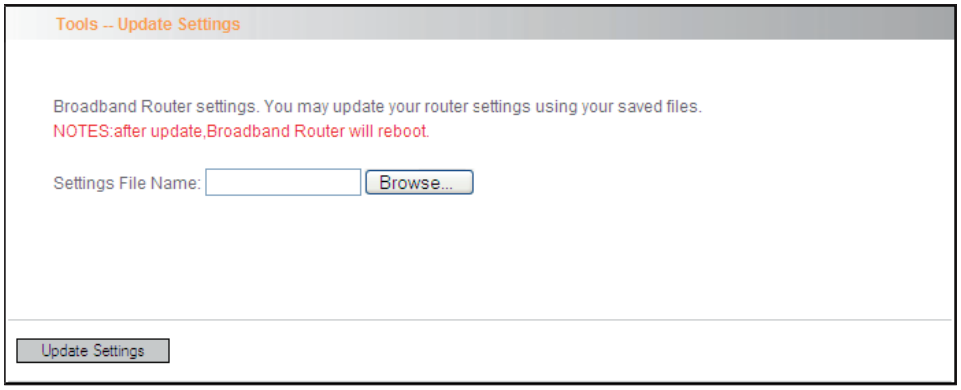
2. Click the "Backup settings" button, and click "Save" on the appearing "File Download" dialog to export the router's configuration file.



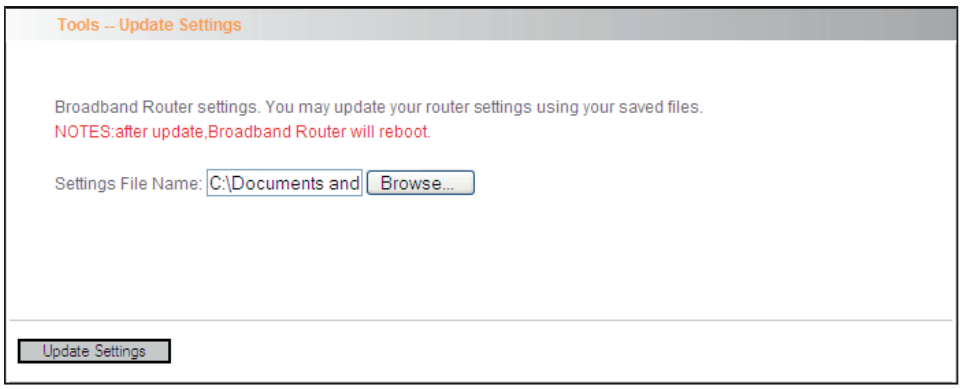
4.5.5 Update

This function enables you to import the previous backup file with ease. The steps are as follows:

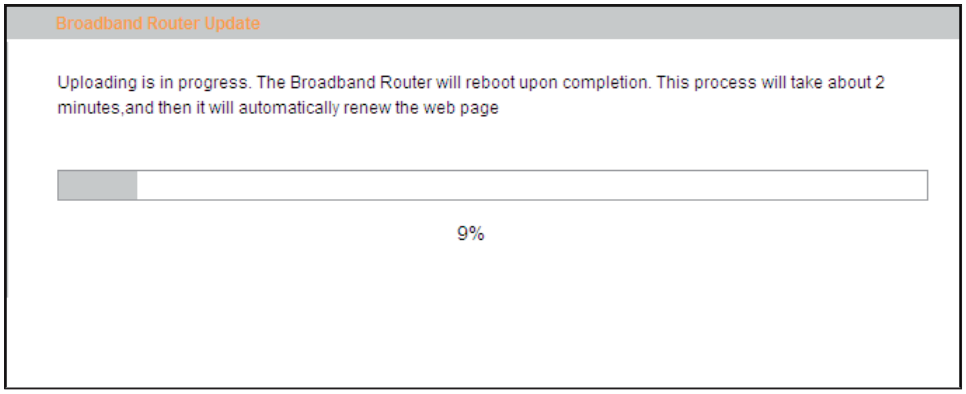
1. Click the "Update" menu to display the "Tools—Update Settings" screen.


Tools -- Update Settings
Broadband Router settings. You may update your router settings using your saved files.
NOTES:after update,Broadband Router will reboot.
Settings File Name:
Browse...
Update Settings

2. Click “Browse” to select the file you want to import.


Tools -- Update Settings
Broadband Router settings. You may update your router settings using your saved files.
NOTES:after update,Broadband Router will reboot.
Settings File Name:
C:\Documents and
Browse...
Update Settings

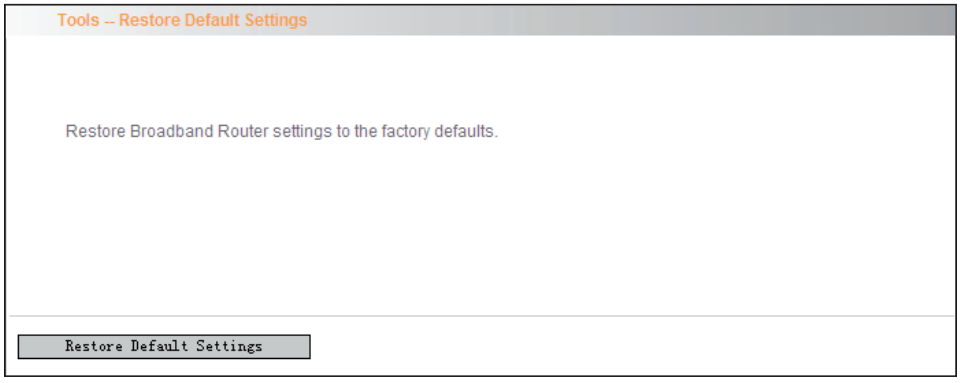
3. Click “Update settings” to import the configuration and the device will reboot.


Broadband Router Update
Uploading is in progress. The Broadband Router will reboot upon completion. This process will take about 2 minutes,and then it will automatically renew the web page
9%

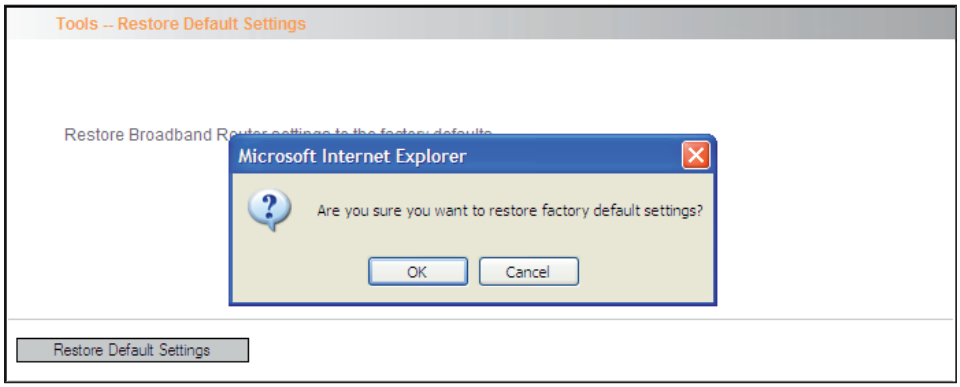
4.5.6 Restore default

If you have made some illegal operation on the device, you will be unable to access the Internet. This feature enables you to restore the device to factory default settings.

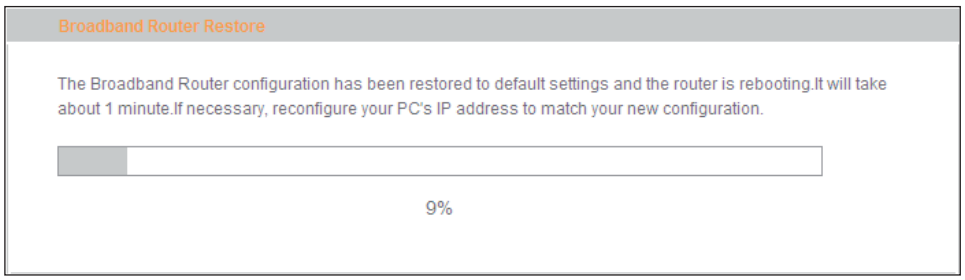
1. Click “Restore Default” to display the “Tools -- Restore Default Settings” screen.



2. Click the Restore Default Settings button, and click “Ok” on the appearing dialog.


Tools -- Restore Default Settings
Restore Broadband Router settings to the factory defaults
Microsoft Internet Explorer
Are you sure you want to restore factory default settings?
OK
Cancel
Restore Default Settings

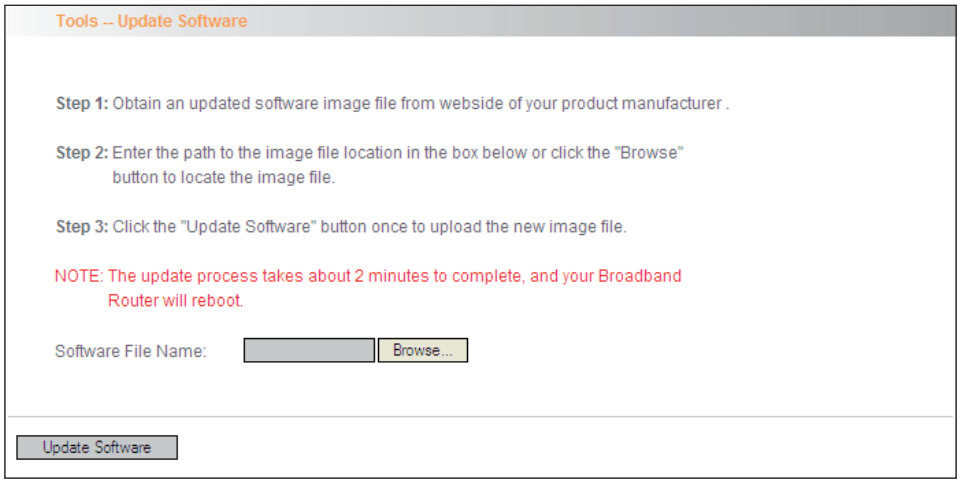
3. After clicking “Ok”, you will see the procedure bars.


Broadband Router Restore
The Broadband Router configuration has been restored to default settings and the router is rebooting.It will take about 1 minute.If necessary, reconfigure your PC's IP address to match your new configuration.
9%

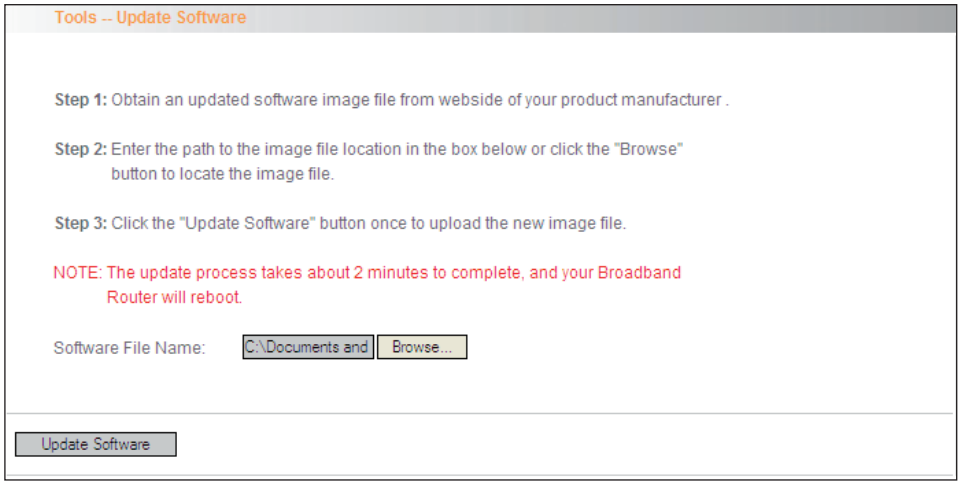
4.5.7 Update Software

Update Software enables you to upgrade the device to improve its system stability. The upgrade steps are as follows:

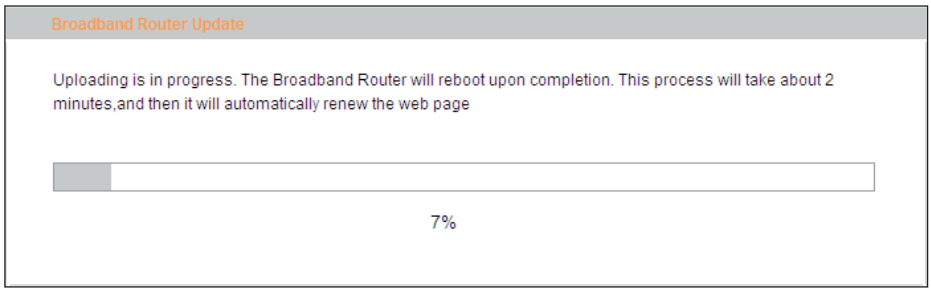
1. Click “Update Software” to display the “Tools -- Update Software” screen.


Tools -- Update Software
Step 1: Obtain an updated software image file from webside of your product manufacturer .
Step 2: Enter the path to the image file location in the box below or click the "Browse" button to locate the image file.
Step 3: Click the "Update Software" button once to upload the new image file.
NOTE: The update process takes about 2 minutes to complete, and your Broadband Router will reboot.
Software File Name:
Browse...
Update Software

2. Click the “Browse” button to select the upgrade file and then click “Update Software”.

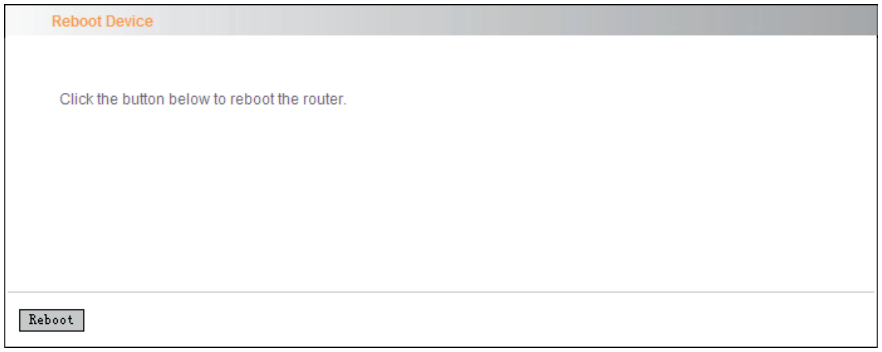

Tools -- Update Software
Step 1: Obtain an updated software image file from webside of your product manufacturer .
Step 2: Enter the path to the image file location in the box below or click the "Browse" button to locate the image file.
Step 3: Click the "Update Software" button once to upload the new image file.
NOTE: The update process takes about 2 minutes to complete, and your Broadband Router will reboot.
Software File Name:
C:\Documents and
Browse...
Update Software

3. After clicking the “Update Software”, it comes to the upgrade screen. The progress takes about 2 minutes.


Broadband Router Update
Uploading is in progress. The Broadband Router will reboot upon completion. This process will take about 2 minutes,and then it will automatically renew the web page
7%

4.5.8 Reboot

To reboot the router, click “Management”----“Reboot” to enter the page below, and then click the “Reboot” button there.

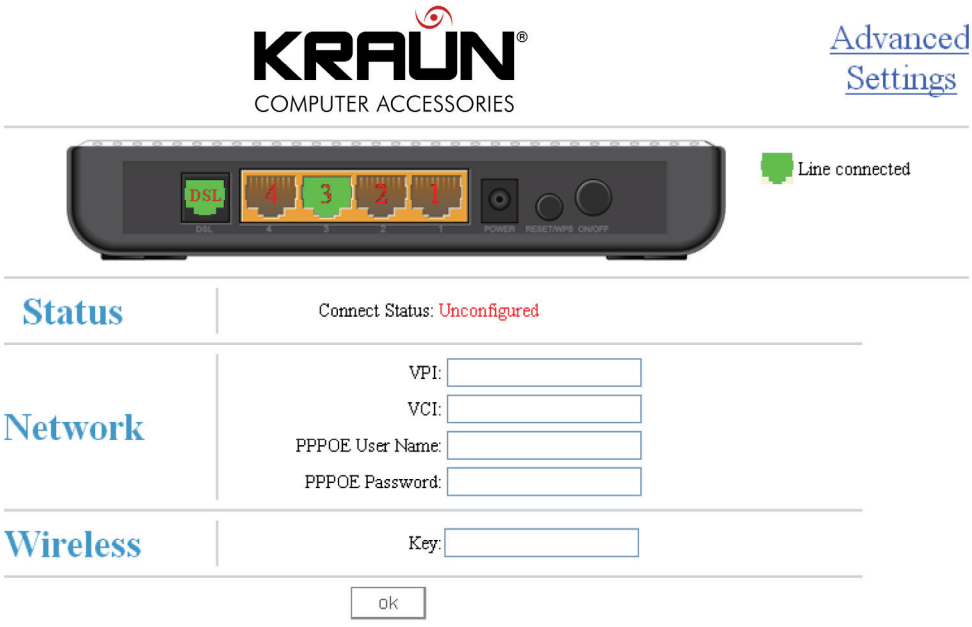


4.6 Exit

Select the Exit menu and click Ok on the appearing dialog to log out from the router's web-based utility.

4.7 Back to Wizard

Click Back to Wizard menu, you will come back to the router's setup wizard screen as shown in the screen below:

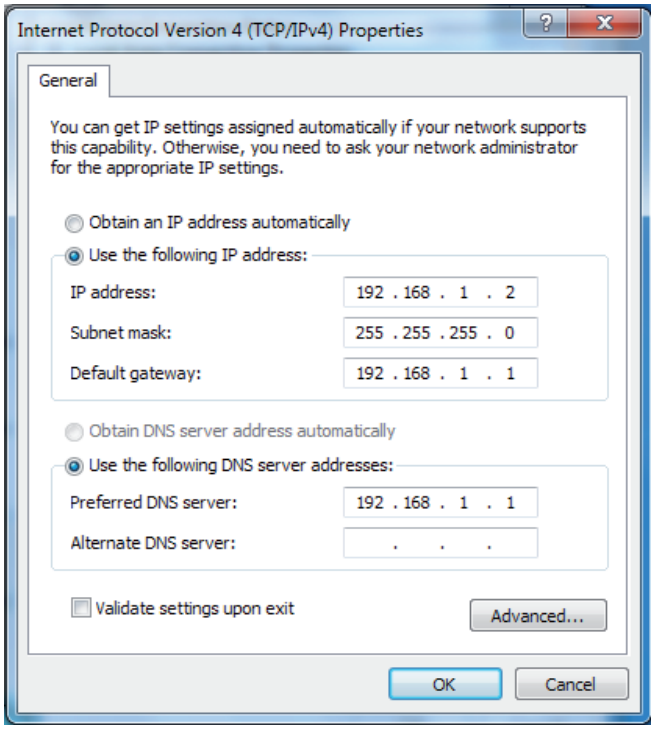


Appendix 1

1. Setting the IP of your PC manually

Choose “Use the following IP address”, and enter the IP address: 192.168.1.xxx. (xxx ranges 2~254), Subnet mask : 255.255.255.0,

Gateway: 192.168.1.1, DNS Server: You can enter your local DNS server address (consult your local ISP) or set the Router as DNS proxy server.


Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 2
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 1 . 1
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

Click “OK” to finish settings. Then click “OK” on “Properties” of “local area connection” to save settings.

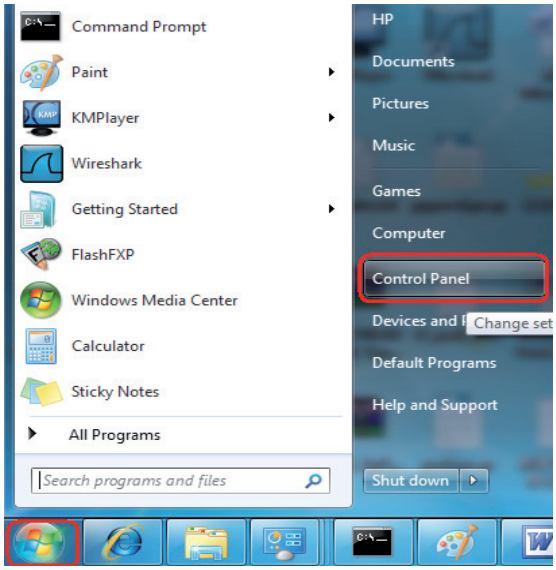
2. PC dial-up

When working in bridging mode, Kraun “ADSL2/2+ Wireless-N Router 150Mbps plus” connects with internet via dial-up software (the third party software). With multiple built-in VPI/VCI, there is no need for any configuration and only an installed dial-up program will enable access to internet. Different ISP may use different dial-up software.

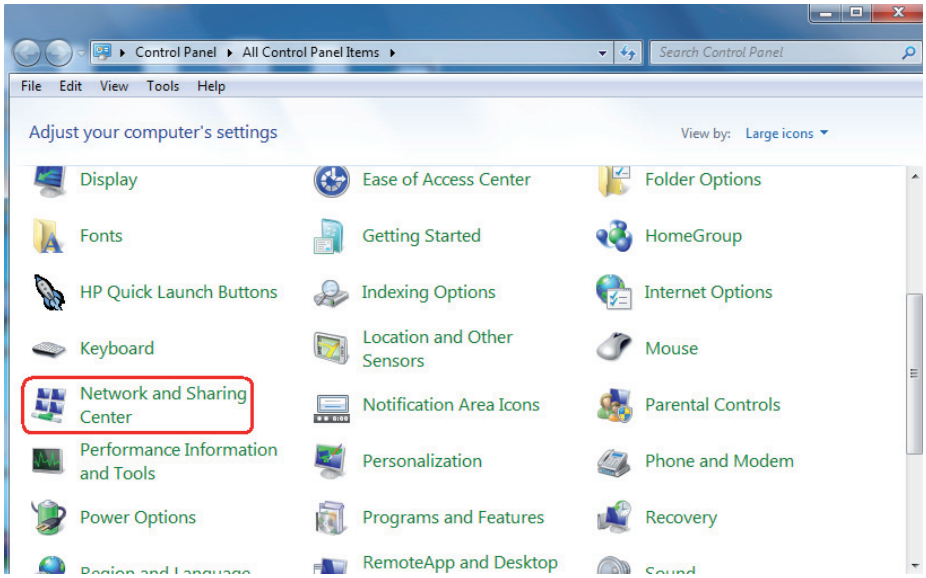
Use the included dial-up software of Windows to access internet if you are a PPPoE dial-up user. ISP may provide special dial-up software. Please refer to the matched “help” files of the third party software during installation.

The installation method of Windows dial-up software is illustrated below (Windows 7 is used as an example).

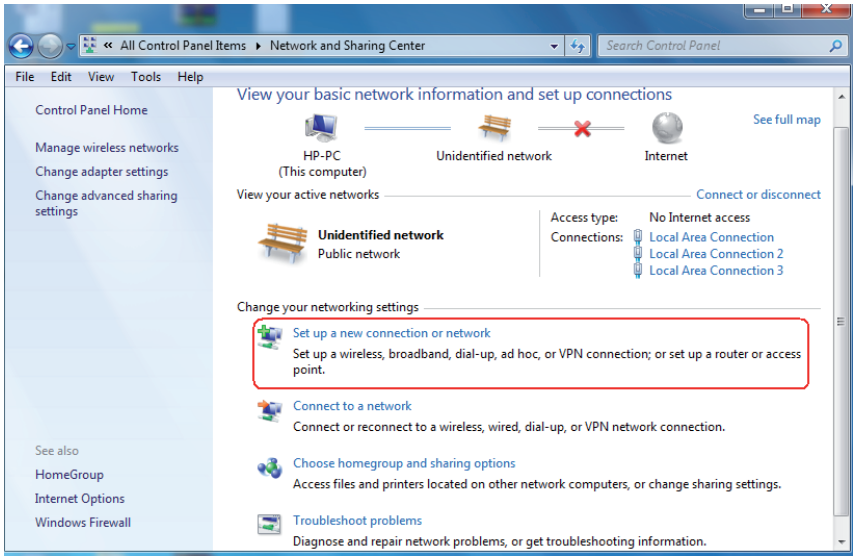
Click icon on the left bottom of the PC's desktop, and then click "Control Panel":



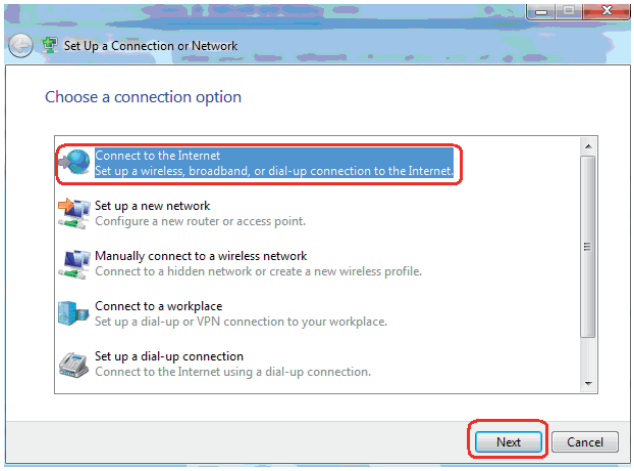
Enter Control Panel page and click "Network and Sharing Center" as below:



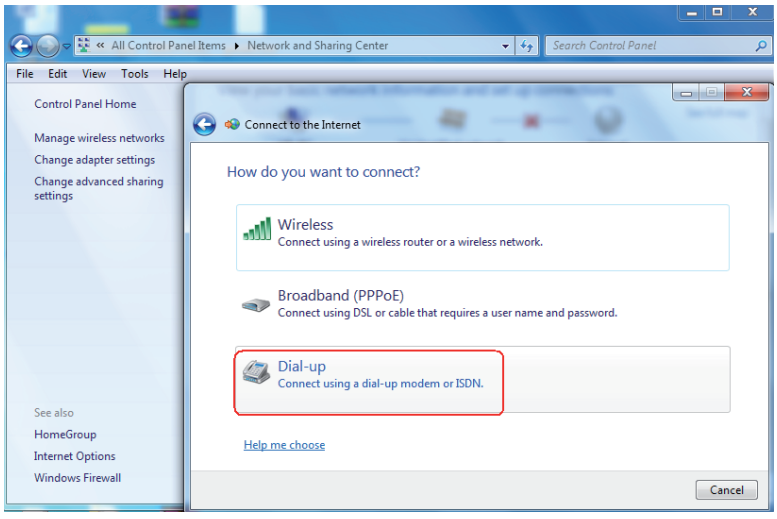
Enter "Network and Sharing Center" and select "Set up a new connection or network" as below:


All Control Panel Items ▸ Network and Sharing Center
Search Control Panel
File Edit View Tools Help
Control Panel Home
Manage wireless networks
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
See full map
HP-PC
(This computer)
Unidentified network
Internet
View your active networks
Connect or disconnect
Unidentified network
Public network
Access type: No Internet access
Connections: Local Area Connection
Local Area Connection 2
Local Area Connection 3
Change your networking settings
Set up a new connection or network
Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.
Connect to a network
Connect or reconnect to a wireless, wired, dial-up, or VPN network connection.
Choose homegroup and sharing options
Access files and printers located on other network computers, or change sharing settings.
Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.
See also
HomeGroup
Internet Options
Windows Firewall

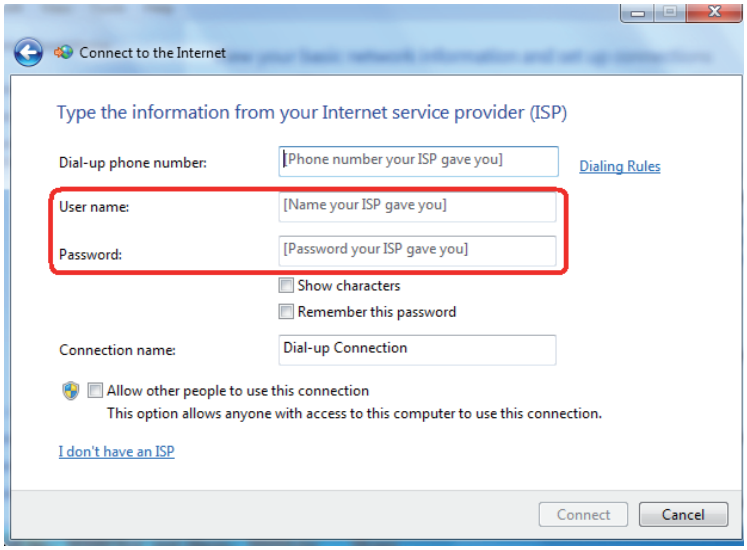
Choose “Connect to the Internet” and click “Next” on the page below:


Set Up a Connection or Network
Choose a connection option
Connect to the Internet
Set up a wireless, broadband, or dial-up connection to the Internet.
Set up a new network
Configure a new router or access point.
Manually connect to a wireless network
Connect to a hidden network or create a new wireless profile.
Connect to a workplace
Set up a dial-up or VPN connection to your workplace.
Set up a dial-up connection
Connect to the Internet using a dial-up connection.
Next
Cancel

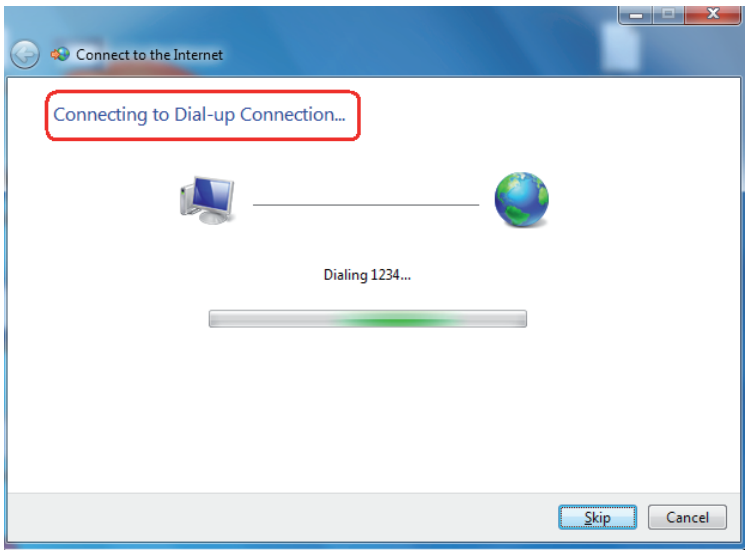
e) Select “Dialup” on the appearing page below:


All Control Panel Items ▸ Network and Sharing Center
Search Control Panel
File Edit View Tools Help
Control Panel Home
Manage wireless networks
Change adapter settings
Change advanced sharing settings
Connect to the Internet
How do you want to connect?
Wireless
Connect using a wireless router or a wireless network.
Broadband (PPPoE)
Connect using DSL or cable that requires a user name and password.
Dial-up
Connect using a dial-up modem or ISDN.
Help me choose
Cancel
See also
HomeGroup
Internet Options
Windows Firewall

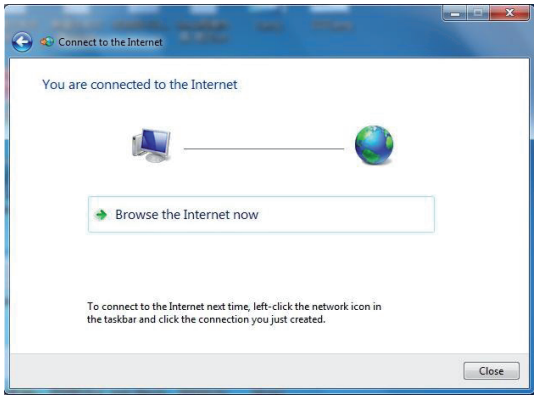
f) Enter User name and password provided by your ISP on the page below:


Connect to the Internet
Type the information from your Internet service provider (ISP)
Dial-up phone number:
[Phone number your ISP gave you]
Dialing Rules
User name:
[Name your ISP gave you]
Password:
[Password your ISP gave you]
Show characters
Remember this password
Connection name:
Dial-up Connection
Allow other people to use this connection
This option allows anyone with access to this computer to use this connection.
I don't have an ISP
Connect
Cancel

g) And then click "Connect".



h) If you get the screen below in a while, then you can access Internet.


Connect to the Internet
You are connected to the Internet
Browse the Internet now
To connect to the Internet next time, left-click the network icon in the taskbar and click the connection you just created.
Close

Appendix 2

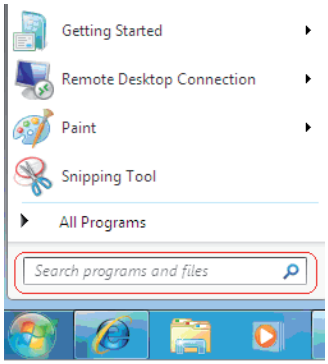
1. Troubleshooting

Trouble Case	Troubleshooting
Power LED Off	• Check if the power adapter is connected properly. • Check if the power adapter is matched.
ADSL LINK Off	• Check if the ADSL cable connection is OK. • Make sure the telephone line is OK with your phone. • Check the phone line cabling is right.
LAN LINK Off	• Check the Ethernet cable is OK. • Make sure the PC's NIC indicator is ON. • Make sure the NIC works normally.
Can't access the Internet	• Make sure the above troubles are clear. • Make sure the dial-up connection is established and set up. • Make sure the user name and password are right. • If the dial-up is OK, please make sure the IE proxy server is configured properly. • Please try opening multiple web pages

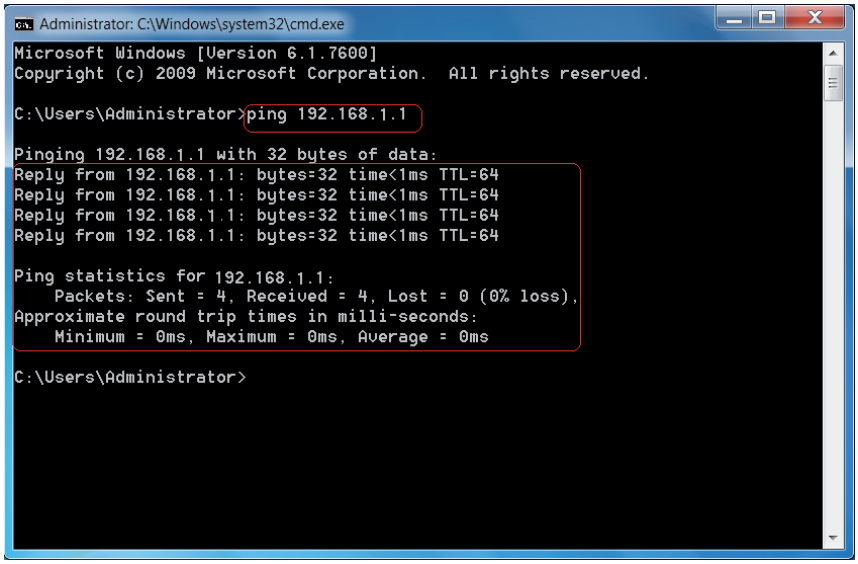
2. Verifying the Connection

First, click the start menu on the left bottom corner of your computer desktop.

Then, input “cmd” in the search programs and file texts box and press “enter’.

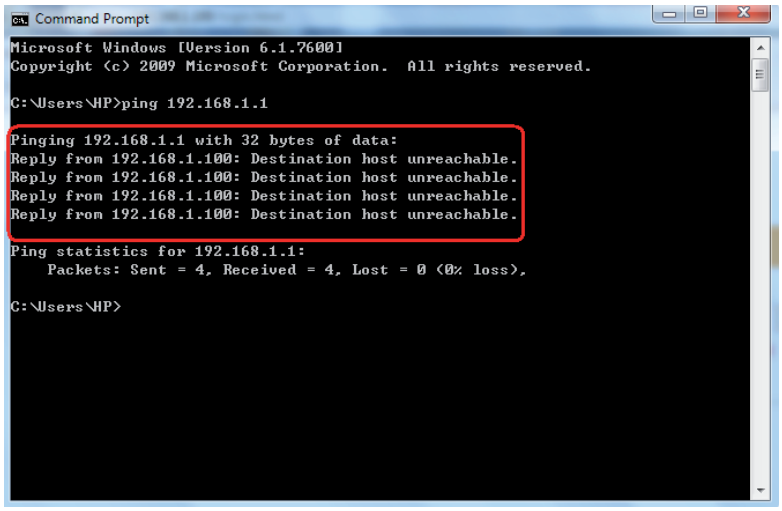


Finally, Open the dos window and enter “ping 192.168.1.1”, and press Enter. If the screen displays the following results, it indicates your computer has already been connected to the router.


Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\Administrator>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Users\Administrator>

Now the direct link between your computer and the router has been successfully established, which means you can log on to the router’s web-based utility.

If the screen shows as below, it indicates the connection hasn’t been established. Then please check the previous settings, the power of the Router, and the cables between the Router and the computer. Then try to set it again.


Command Prompt
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\HP>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.100: Destination host unreachable.
Reply from 192.168.1.100: Destination host unreachable.
Reply from 192.168.1.100: Destination host unreachable.
Reply from 192.168.1.100: Destination host unreachable.
Ping statistics for 192.168.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
C:\Users\HP>

3. FAQ

Q: How do I judge whether ADSL connection is OK?
A: After the hardware is connected correctly, when the connection is OK, the "ADSL-LINK" indicator of Kraun "ADSL2/2+ Wireless-N Router 150Mbps plus" will be always on; otherwise, it will be flashing. Flashing indicates the connection is troubled or wrong. Please consult your ISP or connect your cables again.

Q: I'm an ADSL user, but why sometimes I cannot access the Internet?
A: Because ADSL adds high frequency digital signal to the low frequency audio of common telephone line, any device added in the connection between the telephone company and the ADSL filter will jeopardize the normal data transmission. We recommend you avoid connecting telephone or other devices before filter.

Q: If my place is far from the telecommunication office, can I install ADSL?
A: At present, ADSL2+ technology controls the distance under 6.5KM. Because ADSL2+ has high requirements for the line, it is better to keep the distance under 3KM for good quality.

Q: Will ADSL be disconnected like 56K Modem?
A: Regardless whichever device is, it might be troubled at times. ADSL line is also disconnected sometimes, but this good quality line can reduces the chance to be disconnected.

Q: I opened ADSL service, but can I use ADSL2+ Modem?
A: Absolutely, ADSL2+ can comply with all the ADSL services. When your ISP offers you ADSL2+ service, you avoid buying another modem. In addition, the price of ADSL2+ is almost the same as ADSL, so ADSL2+ is a reasonable choice.

Q: What are VPI, VCI?
A: VPI (Virtual Path Identifier) and VCI (Virtual Channel Identifier) are to identify ATM terminal (ADSL) for DSLAM, usually provided the local ISP.

Q: What related parameters are required from your ISP?
A: For dial user, Connection protocol, User name, Password, Value of VPI/VCI, Encapsulation mode and so on.

Q: The firmware upgrade fails and why can't I enter the Web-based management interface?
A: Contact the technical engineer for support or after-sales service engineer.
Note: Please download the upgrade packets from the Kraun website.

Q: How do I restore my device to factory default value?
A: There is a reset button on the Router. Follow the steps below to restore the device:
1) Keep the device in running status.
2) Keep pressing the reset button for about 5 seconds with a tip object. When you release the button, the reset is finished.

Q: How can I obtain a correct DNS server address?
A: 1) Inquiry your ISP to obtain DNS parameters;
2) After the Router successfully logins to the Web-based management interface, select "Running Status" on the menu and you can check the DNS parameters and record.

Q: Which factors affect the wireless signals?

A: 1) The walls in the house are main obstacles. Because wireless LAN adopts wireless microwave frequency range, the signals received by wireless receiving devices behind the obstacles will be rather weak.

2) Physical obstacles not only hold up the wireless signals but also absorb the electromagnetic power.

3) The working frequency range of IEEE802.11b/g standard is 2.4GHz, but other electrical devices are also working in this frequency such as microwave oven, Bluetooth device, wireless telephone and refrigerator, etc. If there are strong magnetic fields beside, wireless network will be affected.

4) If there are multiple wireless devices in wireless environment, channel conflict and wireless signal interference may occur.

5) The strong signal interference resources such as wireless transmission tower, electric welding machine, electric car or electric transformer may disturb the wireless signals or devices.

6) The weather may affect the outdoor wireless signals greatly. The signals attenuate sharply in lightning storm or gloomy weather. However, the signals in sunny weather can transmit farther.

Q: How can I improve signal-transmitting quality?

A: 1) Choose a proper place for wireless Router. The requirements are as follows:

1. The place should be high enough for the Router to transmit the signals widely, thus the obstacles and dead spots will be greatly reduced.

2. When you choose the place to set the Router, make sure that the signals pass through fewer walls.

2) Modify channels to reduce wireless disturbance.

Note: When you set your wireless transmitting channel, keep above 5 channels far away from other wireless signal channels.

3) Keep the wireless Router far away from household appliances to reduce the disturbance of the signals.

4) If the antenna of wireless Router is detachable, you can change it for a higher gain one to enhance wireless signals.

4. VPI/VCI List

For the convenience of customers, our company collects a list of VPI/VCI. If you cannot successfully dial-up, please ask your ISP for help

ISP	VPI	VCI	Encapsulation
Australia - Telstra	8	35	PPPoA LLC
Argentina - Telecom	0	33	PPPoE LLC
Argentina - Telefonica	8	35	PPPoE LLC
Argentina	1	33	PPPoA VC-MUX
Belgium-ADSL Office	8	35	1483 Routed IP LLC
Belgium - Turboline	8	35	PPPoA LLC
Bolivia	0	34	1483 Routed IP LLC
Brazil - Brasil Telcom	0	35	PPPoE LLC
Brazil - Telefonica	8	35	PPPoE LLC
Brazil - Telmar	0	33	PPPoE LLC
Brazil - South Region	1	32	PPPoE LLC
Colombia - EMCALI	0	33	PPPoA VC-MUX
Columbia - ETB	0	33	PPPoE LLC
Costa Rica - ICE	1	50	1483 Routed IP LLC
Denmark-Cybercity, Tiscali	0	35	PPPoA VC-MUX
France (1)	8	35	PPPoE LLC
France (2)	8	67	PPPoE LLC
France (3)	8	35	PPPoA VC-MUX
Germany	1	32	PPPoE LLC
Hungary - Sci-Network	0	35	PPPoE LLC
Iceland - Islandssimi	0	35	PPPoA VC-MUX
Iceland - Siminn	8	48	PPPoA VC-MUX
Israel	8	35	PPPoA VC-MUX
Italy	8	35	PPPoA VC-MUX
Jamaica (1)	8	35	PPPoA VC-MUX
Jamaica (2)	0	35	PPPoA VC-MUX
Jamaica (3)	8	35	1483 Bridged IP LLC
Jamaica (4)	0	35	1483 Bridged IP LLC
Kazakhstan	0	33	PPPoA VC-MUX
Mexico	8	35	PPPoE LLC
Netherlands - BBNED	0	35	PPPoA VC-MUX
Netherlands - MX Stream	8	48	PPPoA VC-MUX
New Zealand - Slingshot	0	100	PPPoA VC-MUX
Portugal	0	35	PPPoE LLC

Puerto Rico - Coqui.net	0	35	PPPoA LLC
Saudi Arabia (1)	0	33	PPPoE LLC
Saudi Arabia (2)	0	35	PPPoE LLC
Saudi Arabia (3)	0	33	1483 Bridged IP LLC
Saudi Arabia (4)	0	33	1483 Routed IP LLC
Saudi Arabia (5)	0	35	1483 Bridged IP LLC
Saudi Arabia (6)	0	35	1483 Routed IP LLC
Spain - Albura, Tiscali	1	32	PPPoA VC-MUX
Spain - Colt Telecom, Ola Internet	0	35	PPPoA VC-MUX
Spain - EresMas, Retevision	8	35	PPPoA VC-MUX
Spain - Telefonica (1)	8	32	PPPoE LLC
Spain - Telefonica (2), Terra	8	32	1483 Routed IP LLC
Spain - Wanadoo (1)	8	35	PPPoA VC-MUX
Spain - Wanadoo (2)	8	32	PPPoE LLC
Spain - Wanadoo (3)	8	32	1483 Routed IP LLC
Sweden - Telenordia	8	35	PPPoE
Sweden - Telia	8	35	1483 Routed IP LLC
Switzerland	8	35	PPPoE LLC
Trinidad & Tobago - TSTT	0	35	PPPoA VC-MUX
Turkey (1)	8	35	PPPoE LLC
Turkey (2)	8	35	PPPoA VC-MUX
United States - 4DV.Net	0	32	PPPoA VC-MUX
United States - All Tel (1)	0	35	PPPoE LLC
United States - All Tel (2)	0	35	1483 Bridged IP LLC
United States - August.net (1)	0	35	1483 Bridged IP LLC
United States - August.net (2)	8	35	1483 Bridged IP LLC
United States - BellSouth	8	35	PPPoE LLC
United States - CenturyTel (1)	8	35	PPPoE LLC
United States - CenturyTel (2)	8	35	1483 Bridged IP LLC
United States - Coqui.net	0	35	PPPoA LLC
United States - Covad	0	35	PPPoE LLC
United States - Earthlink (1)	0	35	PPPoE LLC
United States - Earthlink (2)	8	35	PPPoE LLC
United States - Earthlink (3)	0	32	PPPoALLC
United States - Embarq	8	35	1483 Bridged IP LLC
United States - GWI	0	35	1483 Bridged IP LLC
United States - QWest (1)	0	32	PPPoALLC

United States - QWest (2)	0	32	PPPoA VC-MUX
United States - QWest (3)	0	32	1483 Bridged IP LLC
United States - SBC (1)	0	35	PPPoE LLC
United States - SBC (2)	0	35	1483 Bridged IP LLC
United States - SBC (3)	8	35	1483 Bridged IP LLC
United States – South Western Bell	0	35	1483 Bridged IP LLC
United States - Sprint (1)	0	35	PPPoALLC
United States - Sprint (2)	8	35	PPPoE LLC
United States - SureWest Communications(1)	0	34	1483 Bridged LLC Snap
United States - SureWest Communications(2)	0	32	PPPoE LLC
United States - SureWest Communications(3)	0	32	PPPoA LLC
United States - Toast.Net	0	35	PPPoE LLC
United States - US West	0	32	PPPoA VC-MUX
United States - Verizon (1)	0	35	PPPoE LLC
United States - Verizon (2)	0	35	1483 Bridged IP LLC
United Kingdom (1)	0	38	PPPoA VC-MUX
United Kingdom (2)	0	38	PPPoE LLC
United Kingdom - AOL	0	38	PPPoE VC-MUX
United Kingdom - Karoo	1	50	PPPoA LLC
Venezuela - CANTV	0	33	1483 Routed IP LLC
Vietnam	0	35	PPPoE LLC
Vietnam - VDC	8	35	PPPoE LLC
Vietnam - Viettel	8	35	PPPoE LLC
Vietnam - FPT	0	33	PPPoE LLC

Appendix 3: Regulatory Information

Prodotto, importato e distribuito da:
This product is manufactured, imported and distributed by:
CDC Point S.p.A. Via Calabria, 1 - Località Gello - 56025 Pontedera (PI) - Italy

Dichiarazione di conformità sintetica:
Si dichiara che questo prodotto è conforme alle vigenti normative e soddisfa i requisiti essenziali richieste dalla Direttiva 1999/5/CE (Terminali di Telecomunicazione e Radio).
Questo dispositivo deve essere usato in conformità con i regolamenti e le limitazioni d'uso in tutti i paesi della comunità europea. L'utilizzo in Francia è permesso con la seguente restrizione: l'uso all'aperto è limitato a 10 mW (EIRP) nella banda 2454-2483,5 MHz

Short Declaration of conformity:
We hereby declare that this product is compliant with the current regulations and meets the essential requirements of Directive 1999/5/CE (Radio & Telecommunication Terminal Equipments – R&TTE).
This device must be used in strict accordance with the regulation. Use in France is allowed with the following restriction: Outdoor use limited to 10 mW (EIRP) with the band 2454-2483,5 MHz.

La dichiarazione di conformità originale può essere richiesta al Supporto Tecnico sul sito www.kraun.it
The original declaration of conformity can be requested to the Technical Support on www.kraun.it

Appendix 4 Contact Information

Need to contact Kraun?

Visit us online for information on the latest products and updates to your existing products at:
http://www.Kraun.it